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Evaluation of applied trip reduction strategies

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EVALUATION OF APPLIED TRIP REDUCTION STRATEGIES

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ABSTRACT

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by Mark J. Burriss

Key Words: Employer Trip Reduction, Regulation 13, Rule 1, Transportation, Commute Alternatives

Regulations were promulgated by federal and state agencies requiring large workplaces to participate in a program to reduce air pollution in high air pollution areas. Later, these regulations were suspended. The effects of these regulatory changes are incorporated into this thesis.

This study measures the effectiveness of applied strategies for employee trip reduction. Parking lot counts were performed to quantify the effectiveness of a customized Employer Trip Reduction Plan. In addition, the effectiveness of different levels of rideshare assistance was quantified. The results from this study were then put into a broader context to evaluate the effectiveness of these trip reduction strategies.

The results of this study show that, in general, employees are not ready to use commute alternatives. Programs of the future will need to focus on maximizing existing resources due to the lack of funding for large transit projects.

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LIST OF ABBREVIATIONS

ABAG	Association of Bay Area Governments
AVR	Average Vehicle Ridership
BAAQMD	Bay Area Air Quality Management District
CAA	Clean Air Act
CAP	Clean Air Plan
CCAA	California Clean Air Act
CARB	California Air Rescues Board
EPA	Environmental Protection Agency
ETC	Employee Transportation Coordinator
ETR	Employer Trip Reduction
ETRP	Employer Trip Reduction Plan
HOV	High Occupancy Vehicle
LEV	Low Emission Vehicle
MTC	Metropolitan Transportation Commission
RIDES	Rides for Bay Area Commuters
SIP	State Implementation Plan
TCM	Transportation Control Measures
VER	Vehicle Employee Ratio
ZEV	Zero Emission Vehicle

CHAPTER 1

Introduction

Statement of Problem

Air pollution is so widespread that half of the nation's population is exposed to air pollution above federal standards several days a year (BAAQMD 1993). Excessive air pollution from cars is contaminating the Bay Area ecosystem. There are approximately four million cars in the Bay Area producing 80% of the carbon monoxide emissions and about 50% of the ground level ozone contamination (RIDES 1994). These contaminants affect the local population's health and quality of life and are particularly unhealthy for children and the elderly.

The secondary problem is traffic congestion. Congestion in the United States has been estimated to cost $20 billion in the nation's top twenty five cities in 1989 (Rose 1994). Congestion in the San Francisco Bay Area is costing businesses and residents more and more due to gas,

time lost in commute delays, and insurance premiums. Also significant is the mental stress associated with congestion.

The local regulatory solution was to implement the Clean Air Plan (CAP) consisting of four key measures, one of which was the Employer Trip Reduction Program. The complete regulatory background is discussed in detail in Chapter 2. These regulatory requirements were the basis for developing the Employer Trip Reduction Plan (ETRP) for the Raychem site. Raychem Corporation's headquarters in Menlo Park, California was the location of the thesis research. In the remainder of the thesis, the location will referred to as the site.

Existing trip reduction program elements were augmented with Employer Trip Reduction Plan (ETRP) components most appropriate for the site. New ETRP components were identified through analysis of the employee transportation survey, current program elements, and recommendations from BAAQMD guidance documents. After the program was implemented, the program's success was evaluated.

The program's effectiveness was evaluated using three methods. The overall program was reviewed by conducting

parking lot counts during the survey week (October 31 - November 4, 1994), and after the program had been implemented (December 4 - December 8, 1995). A formal employee survey was not performed in 1995 due to the change in regulatory requirements. Upon completion of the post-implementation parking lot survey, the data was analyzed to determine what was successful and applicable to other work sites.

The second method was to provide different levels of assistance to employees who requested carpool information and measure the relative effectiveness. There were three levels of assistance provided. This was done through telephone surveys. The third measure of success was to monitor the number of applications for the Guaranteed Ride Home program.

The data generated from Raychem's application of trip reduction strategies will enable similar corporations to better implement their trip reduction programs. It will also assist the BAAQMD to benchmark a scientific application of their standard. Because of the recent suspension of employer-based trip reduction regulations in California,

this information will be beneficial to future development of regulatory requirements. In addition, businesses interested in continuing trip reduction on a voluntary basis can benefit from the information in this study.

There is a need to establish cost-effective quantifiable methods to reduce the number of single-occupant vehicles. The controlled application of known methods provides the necessary information for that evaluation.

Purpose, Scope, and Limitations of the Thesis

The purpose of this thesis is to identify the effectiveness of applied trip reduction strategies at a specific site and evaluate employer's response to the removal of regulatory requirements.

An Employer Trip Reduction Plan was developed in compliance with BAAQMD Regulation 13 Rule 1 for the main Raychem site in the Bay Area. The site chosen was the Raychem facility at 300 Constitution Drive, Menlo Park California (See site description on page 23).

During the implementation phase of the project, all regulations requiring the implementation of Employer Trip

Reduction Plans (Senate Bill 437, 1995) were suspended. The suspension does not provide a mechanism to address air pollution, traffic congestion, and energy consumption caused by commute traffic. The BAAQMD is working with San Francisco Bay Area employers to develop an alternative solution and this thesis will highlight those efforts.

The primary limitation is that the project is limited to a single company and its cultural and geographical characteristics may not apply directly to other sites. However, the program elements that were implemented are common in the field of employer-based trip reduction. A secondary limitation is not all of the program elements originally required by the BAAQMD regulation were implemented because of the suspension of Regulation 13, Rule 1.

Methodology

The methods of this thesis consist of four parts: 1) researching existing information, 2) conducting and analyzing an employee transportation survey, 3) implementing appropriate employee trip reduction elements, and 4)

evaluating the employee trip reduction element's effectiveness.

The research included a literature review and a baseline employee transportation survey. The most current information was acquired through participation in key San Francisco Bay Area transportation organizations. Those organizations are presented in Chapter 2.

The San Jose State University Human Subjects Review Application was filed and approved. In it a request was made to use existing data from the employee transportation survey that was performed the first week in November, 1994 for this thesis. The survey included 2,504 Raychem employees at three sites who arrive at work between 6:00 a.m. and 10:00 a.m. on weekdays.

The employee survey was performed in accordance with BAAQMD Regulation 13, Rule 1 and used as a baseline for Raychem's vehicle per employee ratio objectives. The results are reported in Chapter 5.

The survey provided for the selection of trip reduction plan elements. In addition to the survey, elements were selected based on BAAQMD guidelines, existing programs, and

budgetary constraints. A complete description of the element selection process is provided in Chapter 3.

The plan's effectiveness was determined by three methods. The first was the use of parking lot counts as mentioned above. The second was to provide three different levels of ridematching assistance to employees and determine if more direct assistance resulted in more successful ridematches. The third was to review the level of participation in the Guaranteed Ride Home program.

The information generated by this thesis will add to employer-based trip reduction research already in existence. Companies such as Raychem that are facing obstacles of program implementation in a time when there are no regulatory requirements will be more likely to apply successful methods from information in this thesis. Transportation demand management studies have been conducted before in other areas of the country and were used to develop the Raychem site specific program elements. However these studies are limited by their relevance to a particular geographic region and will not be used indiscriminately.

To successfully change commute habits in this geographic region, appropriate methodologies must be selected. The selection was based on employee transportation survey results, BAAQMD recommended trip reduction program elements, existing programs, and budgetary constraints. The employee transportation survey asked employees how they are currently getting to work, what commute options they would be willing to try, as well as attitudinal questions. Examples of program elements implemented include an in-house ride matching service, informational bulletin boards with bus and train schedules, and a Guaranteed Ride Home program. Some options such as cash incentives and parking charges were immediately dismissed because of cost and corporate culture. Other options, such as the CalTrain shuttle and on-site workout facility, are already in place as described in the site description in Chapter 3.

The objectives of the Employer Trip Reduction Regulation were based on decreasing the amount of air pollution by reducing the number of cars commuting to work. The regulation also provided for alternative air pollution

reduction activities. Examples of these alternative programs include vehicle buy-back and conversion of corporate fleet vehicles to less polluting fuels.

Strategies that are effective in increasing the average number of occupants per vehicle, or average vehicle ridership, will be useful to other companies facing the same challenges and will also help the BAAQMD develop appropriate regulations. This information will be illuminated in Chapter 6.

Although I am an employee at Raychem and was, during the period of thesis work, in charge of implementing the trip reduction program, I was, nevertheless, able to maintain objectivity while immersed in corporate culture. There are several reasons for this, the primary one was that I was utilizing tools provided by the BAAQMD as guidance throughout the process of plan development. Another was that I knew that the data was to be used in this thesis and performed objective evaluations that went well beyond the legal requirements. An example of that was the study on various levels of assistance given to employees who requested ridematching assistance. The internal politics at

Raychem did, however, set boundaries to what I was able to implement.

I proposed early in the process that Raychem provide what is know as "Commuter Checks" to employees, yet that was denied because of budgetary constraints. I was free, however, to implement programs that were perceived as cost effective at the site, and those provided the information required to draw the conclusions in Chapter 6.

It is also interesting to note that at the same time I was working on implementing programs in compliance with BAAQMD Regulation 13, the Chief Executive Officer and Corporate Government Affairs Manager were lobbying the state controller to abolish the regulation. In fact, I was sent to Sacramento to testify before a state assembly sub-committee against Regulation 13 even though I felt that it had merit and could have been revised to have been less of an administrative burden.

Research Questions

Until October of 1995, employer trip reduction programs were required in the state of California in order to

decrease air pollution and traffic congestion. This thesis tests the cost-effectiveness of employer trip reduction programs. This thesis also provides insight to employee trip reduction programs that work on a voluntary basis.

The following questions will be addressed in this thesis:

1. How should a large company implement an effective employer-based trip reduction program to minimize air pollution generated by its employees commuting to work and meet legal requirements expeditiously?
2. What strategies are effective in changing commuter habits from using single occupant vehicles to alternative commute modes?
3. Are the goals of the Bay Area Air Quality Management (BAAQMD) appropriate and achievable?
4. What elements of Raychem's site specific study are transferable to other companies and appropriate for regulatory review?
5. How are employers responding to the suspension of the mandatory trip reduction regulation?

Assumptions

The thesis was written with the following assumptions;

1) The original plan was based on BAAQMD Regulation 13 Rule 1 being in effect.

2) Removing the requirement that businesses comply with employer-based trip reduction will not solve air quality and congestion problems.

3) Some businesses help solve the problem in a voluntary, cost effective manner.

4) The BAAQMD is not going to cease its efforts to reduce automobile emissions because the San Francisco Bay Area has not met the state's clean air standards and is in jeopardy of losing ozone "attainment" status with the United States Environmental Protection Agency (EPA).

5) Other employers will be more likely to participate in trip reduction programs if there is documented success.

CHAPTER 2

REGULATIONS AND RELATIONSHIPS

Regulatory Background

The field of transportation demand management is not a new one. Unfortunately, the historic methods rarely addressed mitigation of congestion except by simply expanding transportation systems (Ferguson 1990). Expanding populations have quickly outgrown the capacity of those transportation systems and the costs of maintaining existing infrastructure has diverted much of the budget for continued expansion.

Emission control programs, such as manufacturing cleaner cars and vehicle inspection and maintenance, have effectively reduced the amount of pollution emitted per vehicle, but these gains are being offset by the increased number of vehicles on the road (Modarres 1993). This is compounded by the additional commute miles traveled from the suburbs to the work place (Modarres 1993). In response to these problems, Congress has promulgated laws to increase

attention to air quality and transportation demand management.

The Clean Air Act (CAA) Amendments were passed in 1990. They mandated states to change the way employees get to work, otherwise known as Employer Trip Reduction (ETR) (Reiman 1994). The CAA Amendments target areas that are above federal clean air standards for ozone and carbon monoxide levels. Most of the ozone and carbon monoxide pollution is caused by automobiles. The EPA has estimated that roughly 28,000 employers with up to twelve million employees are affected (Rose 1994). States with federal non-attainment areas are: California, Connecticut, Delaware, Illinois, Indiana, Maryland, New Jersey, New York, Pennsylvania, Texas, and Wisconsin.

These states are required to adopt State Implementation Plans (SIPs) that include transportation demand management measures to bring them into compliance. Congress enacted Section 182(d)(1)(B) of Title 1 of the CAA Amendments to require SIPs to include an Employee Commute Option/Employer Trip Reduction (ECO/ETR) Program. The SIP was to increase the average vehicle occupancy by not less than 25% and

applied to employers with one-hundred or more employees (Reiman 1994). The states were empowered to enforce these regulations and sanctions were available under the CAA including civil and criminal prosecution (Reiman 1994). The EPA approves all SIPs to ensure the states are in compliance with federal law. However, the EPA has recently backed off some of these requirements because of petitions from several states including, Texas, Illinois, and Pennsylvania. This has raised recent controversy surrounding the regulations on the federal and state level. Recently the federal law mandating employer-based trip reduction has been challenged by Bill HR 325. This bill has recently passed in the House of Representatives and has been passed on to the Senate (Valendane 1996).

On October 4, 1995, Senate Bill 437 (Lewis) was signed by Governor Wilson in California. The bill prohibits air districts and other public agencies from imposing any requirement on employers to implement a trip reduction program unless the program is expressly required by federal law and the elimination of the program would result in the imposition of federal sanctions. Senate Bill 437 has

eliminated the requirement for California employers to comply with trip reduction regulations. The impact of SB 437 on Raychem's Employer Trip Reduction Plan will be explored further in Chapter 3.

While California's average annual growth rate has been roughly two percent over the past few years, vehicle miles traveled has grown roughly six percent (Loudon 1992). Even with additional smog control regulations on new cars, air pollution is expected to increase as a function of the increase in congestion (Loudon 1992). California legislature responded to this problem by amending the California Clean Air Act (CCAA) in 1988.

The California Clean Air Act (CCAA) mandates that local air districts develop a plan to meet state air quality standards. The California Clean Air Act (CCAA) requires even more stringent air quality standards than the federal requirements in its air districts. A comparison of federal and state air quality standards along with their objectives is listed in Appendix A.

The Bay Area Air Quality Management District (BAAQMD) includes the counties of San Francisco, San Mateo, Santa

Clara, Alameda, Contra Costa, Marin, and Napa, as well as the southern portion of Sonoma County and the western part of Solono County. The BAAQMD is responsible, among other things, for developing Transportation Control Measures (TCMs) to meet the state air quality standards.

Air quality in the Bay Area is generally good, but according to the BAAQMD violates the state ozone standard approximately twenty days a year (BAAQMD 1993). As a result of this, the BAAQMD has proposed twenty-three TCMs, one of which was the employer trip reduction regulation.

During the summer of 1995 there were some significant events surrounding air quality in the Bay Area. The first of which was federal redesignation to attainment for the national ozone standard in May. This prevents the federal government from withholding funding for highway construction. The second was that between then and November the region has exceeded the national standard for ozone on eleven days (BAAQMD 1995). That is the worst record since 1987 when there were fourteen days of federal air quality violations. Currently, the EPA does not plan to revoke the attainment status and the BAAQMD is working with businesses

to develop alternative methods to prevent a reoccurrence of this year's high levels of ozone. The high levels of ozone are believed to have been the result of unusual weather conditions (Jarvis, 1996).

In 1991 the BAAQMD adopted the Bay Area '91 Clean Air Plan (CAP). The CAP was developed by the BAAQMD with assistance from the Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC) (BAAQMD 1993). The objectives of the CAP are to attain the air quality levels for carbon monoxide by 1995 and cut exposure to ozone in half by 1994 (BAAQMD 1993).

Specific measures include four program areas:

1. more stringent controls on polluting industries and businesses;
2. reformulating of fuels, paints, varnishes, and consumer products to reduce volatile pollutant content;
3. programs to reduce automobile use, to reduce traffic congestion, and to improve mobility; and
4. a program to identify and repair highly polluting and "smoking" vehicles (BAAQMD 1993).

In response to the CAP, the BAAQMD Board of Directors adopted Regulation 13, Rule 1, "Trip Reduction Requirements for Large Employers" December 16, 1992. Implementation began July 1, 1993, in Marin and Napa and all other counties

that did not have an existing trip reduction ordinance. For jurisdictions that did have existing ordinances, the implementation date was July 1, 1994.

In compliance with the CCAA and the SIP, the regulation required all public and private employers with one-hundred or more employees at a work site to develop and implement trip reduction programs that encourage alternative transportation modes for the commute to work (BAAQMD 1992). Performance objectives were set by region through the year 1999. These objectives are listed in Table 1, Performance Objectives and Year. Raychem is located in Zone 3, Southern Counties.

Table 1
Performance Objectives and Year

	1993	1994	1995	1996	1997	1998	1999
Zone 1 AVR	1.50	1.65	1.80	2.00	2.20	2.50	2.50
Zone 1 VER	0.66	0.61	0.55	0.50	0.45	0.40	0.40
Zone 2 AVR	1.20	1.26	1.32	1.38	1.44	1.50	1.50
Zone 2 VER	0.83	0.79	0.76	0.72	0.69	0.66	0.66
Zone 3 AVR	**1.10**	**1.15**	**1.20**	**1.25**	**1.30**	**1.35**	**1.35**
Zone 3 VER	**0.91**	**0.87**	**0.83**	**0.80**	**0.77**	**0.74**	**0.74**
Zone 4 AVR	1.05	1.10	1.15	1.20	1.25	1.30	1.30
Zone 4 VER	0.93	0.90	0.87	0.83	0.80	0.77	0.77

(BAAQMD Reg. 13-1-301)

The performance objectives are defined as Average Vehicle Ridership (AVR) and Vehicle Employee Ridership

(VER). AVR is the number of employees reporting to a work site during the peak period divided by the number of vehicles those employees use to arrive at the work site. VER is the reciprocal of AVR (BAAQMD 1992). The actual calculation required assigning a vehicle factor to each type of commute in order to determine the total vehicle trips. This is illustrated in Table 2, Vehicle Trip Calculation, with data from the Raychem site.

Table 2
Vehicle Trip Calculation

Type of Commute	Survey Week Tot.	Vehicle Factor	Vehicle Trips
Drive Alone	4034	1	4034
Carpool w/ 2	617	1/2	308
Carpool w/ 3	108	1/3	36
Carpool w/ 4	35	1/4	8.75
Carpool w/ 5	5	1/5	1
Carpool w/ 6	0	1/6	0
Carpool default	52	1/2.3	22.61
Vanpool w/ 7	0	1/7	0
Vanpool w/ 8	0	1/8	0
Vanpool w/ 9	0	1/9	0
Vanpool w/ 10	0	1/10	0
Vanpool w/ 11	0	1/11	0
Vanpool w/ 12	5	1/12	0.42
Vanpool w/ 13	0	1/13	0
Vanpool w/ 14	3	1/14	0.21
Vanpool w/ 15	0	1/15	0
Vanpool default	0	1/10	0
Transit	19	0	0
Buspool	0	0	0
Motorcycle	20	1	20
Bicycle	42	0	0
Walk	0	0	0
Other	9	0	0
Compressed Work Week Day off	14	0	0
Telecommute	10	0	0
Time off	125	0	0
Off-site	167	0	0
Total	5265		
-other, time off, off-site	301		
Employee Days	4964		4431.49
AVR Calculation	4964 divided	by 4431.49	1.12
VER Calculation	4431.49 divided	by 4964	0.89

The performance objectives were determined through employee transportation surveys administered by employers and submitted to the BAAQMD. Failure to meet those objectives was not a violation of the rule.

Employers were required to register with the BAAQMD by September 30, 1994 and conduct the employee transportation surveys by November 30, 1994 if they have five-hundred or more employees at a site and by May 31, 1995 if they have 100 to 499 employees at a site (Reg. 13-1-406.7). The survey was to be conducted annually unless the employer could demonstrate that a future year performance objective was achieved (Reg. 13-1-406.5).

Employers with affected work sites were required to appoint an Employee Transportation Coordinator (ETC) and an Employer Program Manager. The ETC was required to attend air district certified training within nine months of the effective dates of the rule or within six months of appointment. Employers were required to implement an employer trip reduction program within six months after completion of the survey regardless of the survey results.

The Employer Trip Reduction Program is a group of measures that provides information, assistance, and incentives to employees who use alternative commute modes (Reg. 13-1-216). The regulation guidelines suggest elements of an effective program. Examples of these elements include preferential parking for employees who carpool, a guaranteed ride home, and shuttles to transit.

Employers who failed to meet the 1994 performance objectives were required to develop and submit an Employer Trip Reduction Plan (ETRP). The ETRP is a detailed document that describes implementation budgets and schedules. It also contains discussions of the attitudinal survey and reasons why the employer trip reduction program did not meet the performance objectives (Reg. 13-1-408). The guidance documentation outlines the requirement to implement an Employer Trip Reduction Plan. The air district assigned point values to each of the program measures. Companies who failed to meet their VER were required to implement programs with measures that totaled fifty points. A summary of plan measures and their point values appears in Chapter 3. Raychem failed to meet the 1994 BAAQMD performance objective

and implemented an Employer Trip Reduction Plan (ETRP) at the main site.

Studies to quantify what it would take to get employees to use commute alternatives have been undertaken throughout the transportation industry resulting in predictions for their specific geographic locations. The following information from those studies will be used to help develop elements of the Raychem ETRP.

Relevant Studies on Trip Reduction

In Santa Clara County common program elements include, commute alternative information and promotion, carpool ridematching, transit pass sales and subsidies, awards and prize drawings, guaranteed ride home, informal telecommuting, bicycle parking, shower facilities, and on-site services (Jarvis 1993). The degree of sponsorship and success at different companies varied and employer trip reduction programs were not effective in every case.

A study done in Arizona's Eastern Pima County found the five most common incentives to be: provide information to new employees, alternate mode information dissemination,

bike racks and locker areas, information centers, and newsletter articles (Modarres 1993). In that study direct incentives such as adjusted work hours, information centers, and on-site services created a positive effect on alternative commute usage; elements such as ride share committees and occasional transportation fairs proved to be relatively ineffective (Modarres 1993).

A study of the rideshare programs in southern California found that the most effective program element was personalized rideshare matching. Direct rideshare incentives were not as effective as anticipated (Transportation Research Board 1990). Regional rideshare programs were found to be only 1% effective and growth rate in vehicle miles traveled was 2 to 3%. This data indicates that regional based programs are not sufficient to curb the increase in commuter traffic. Other methods such as employer-based programs, would be more appropriate (Transportation Research Board 1990).

The cost effectiveness of personalized ridematching was found to have a clear economy of scale, however, and should be implemented for the best return on investment

(Transportation Research Board 1990). This is illustrated in a graph depicting the change in employees who drive alone verses program costs (Appendix B).

The South Coast Air Quality Management District has replaced their employer based trip reduction Rule 1501 with something that allows employers to choose from a more comprehensive list of emission-reducing options. Rule 2202 was adopted on December 8, 1995 and was written so as not to conflict with state and federal laws. The changes call for a shift from employer requirements to change employees commute modes to alternative employer-based solutions (San Francisco Chronicle, 1994). Examples of these alternatives include paying money into a fund to research low emission vehicles and installing remote sensors in parking lots that would detect gross polluting vehicles.

The new Rule 2202 applies to the same group of employers with one-hundred or more employees at a work site. Many of the same options are available to choose from with emission reduction credits being the major new alternative. The other major difference is that rideshare plans are not required but employers must meet an annual emission

reduction target for volatile organic compounds, nitrogen oxides, and carbon monoxide. Rideshare plans may be used to make up for deficiencies in other areas of the employer's emission control reduction plan.

Rule 2202 is an interim measure. It is in effect for three years when it will be replaced with a market based program. The market based program will shift responsibility from the employer to the commuter (Southern California Rideshare, 1996). The Rule is currently being challenge in court and may face the same fate as the original regulation.

The information derived from these program evaluations was used during the program development phase of this research.

Organizational Relationships

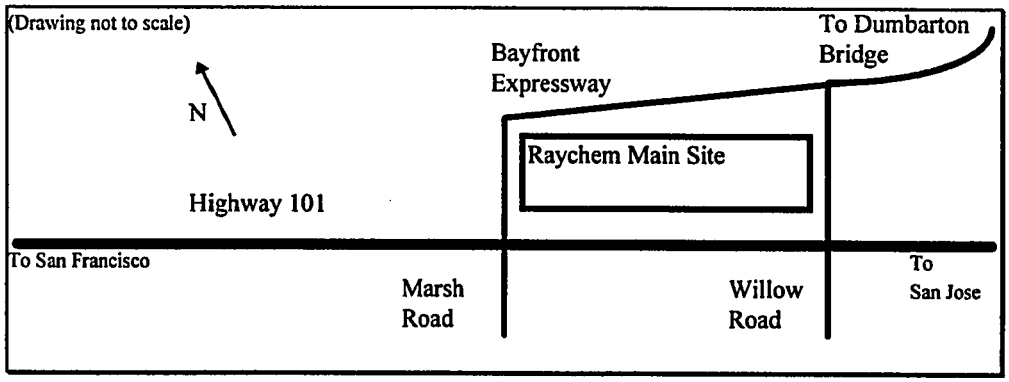
The two primary organizations are the Santa Clara Valley Manufacturing Group and the Bay Area Council Policy Committee. I represented Raychem in regular meetings and spoke out against EBTR at a State Senate hearing in Sacramento with other corporate representatives. Working with San Francisco Bay Area transportation organizations

provided insight into regulatory structure that is unavailable elsewhere.

Other organizations that have proven helpful are the Menlo Park City Transportation Committee and RIDES for Bay Area Commuters (RIDES). City and county transportation staff provide information about funding for commute alternatives and sponsor AB 434 money for projects at corporate sites. The city of Menlo Park is sponsoring the CalTrain shuttle for businesses in the area.
Neighboring companies were approached about partnering commute programs with limited success. The lack of cooperation from neighboring companies when there were regulatory mandates is an indication that even less will be interested in doing so now on a voluntary basis. However, the Sun Microsystems facility at Willow Road and Dumbarton Bridge has been actively working with Raychem to improve CalTrain services to both sites. As a result of partnering efforts, the CalTrain shuttle will better serve both sites with extended hours of operation and service to express trains. Sun Microsystems and Raychem are also working together on a proposal to modify the Dumbarton Express bus

route to better serve our employees who live on the east side of the San Francisco Bay.

Figure 1
Map of Main Site



Raychem has provided on-site services to its employees as a benefit from its very early days. Table 3, On-Site Services, presents a list of the services on-site as well as those nearby.

Table 3
On-Site Services

Service	On-Site	Within walking distance
On-Site Cafeteria	X	
Credit Union	X	
Photo developing	X	
Weight room	X	
Aerobics classes	X	
Par course	X	
Volleyball/Basket-ball courts	X	
Bike/Walk path		X
Horseshoe pits	X	

Existing trip reduction services provided by Raychem before the ETRP Plan was implemented include: bicycle racks, showers on-site with lockers, and CalTrain commuter-shuttle subsidy. The site is served by limited Sam Trans service from Redwood City, Palo Alto, and Fremont. High occupancy vehicle (HOV) lanes are available on both of the key access routes (Highway 101 and the Dumbarton Bridge).

There are significant existing factors that inhibit the use of commute alternatives. Poor rapid transit service to the site is the primary problem. The main site is located at the hub of three counties and the transit services do not cross over county lines effectively. The second problem is the bottlenecks along the access routes that make it difficult and dangerous to ride a bicycle to the site. The third problem is the site's proximity to East Menlo Park and East Palo Alto. Employees are afraid of waiting for transit after dark due to the high crime rate in these neighboring locations. In addition to these problems, the traditional excuses of inconvenience, need to run errands, and extended commute time, hinder the use of commute alternatives.

Employee Survey

It was important to obtain a high return rate of the survey results because a response rate below 60% required all non-respondents to be counted as drive alone in the vehicle employee ratio (VER) calculation. Typically employee survey return rates are 15-20%. If the VER goal of 0.87 VER was attained in 1994, Raychem would not be required to implement a trip reduction plan. Return rates between 60% and 100% the number of peak period employees were split in half. Half were counted as ride alone and half counted as the same VER as that of the calculated VER. The survey calculations for the Raychem site are in the next section and the survey results report, Appendix E.

Raychem launched a marketing campaign consisting of four elements in order to raise survey response rates. The first element was a memo from the Raychem Corporate Chief Executive Officer, Bob Saldich (Appendix C). In it he requested all site employees to participate in the survey. He referred to the Raychem policy of having the highest concern for people, communities, and environment.

The second element was the support of internal Human Resources staff. They were trained in answering common survey questions. The Human Resources Department was tasked with tracking returns and communicating with local management to reinforce the importance of completing and returning the surveys.

The third element was to create a custom poster to increase employee awareness of the commute survey. The poster advertised a mountain bike to be given away. The winner was a randomly selected employee who returned his/her survey before the deadline of November 4, 1994.

The fourth element was a voice mail message sent out by the Director of Corporate Communications that reminded employees to complete their surveys. The message was sent out on Friday of the survey week. This was in order to get surveys from people who may have misplaced them. It also reminded employees of the prize given to an employee who returned the survey by November 4, 1994. In addition to that, voice mail messages were sent to the Human Resources staff urging them to collect as many surveys as they could.

The survey was conducted the first week of November, 1994. The survey was adopted from the BAAQMD model and modified slightly to include site specific information such as mail stops and weekend work days. A copy is attached with the cover letter as Appendix D.

The three Raychem sites in Menlo Park and Redwood City, California were sampled using a 100% sample size or census method. This method was chosen as opposed to random sampling because the results provided more information as to what commute alternatives Raychem employees would be willing to try. In addition it provided an opportunity for every employee to request a ridematch list and it served as a source of awareness education.

The amount of work Raychem did to get a high response rate was not uncommon among other companies. Unfortunately, the result was only a 58% response rate. It was this type of administrative burden that drove the campaign against mandated employer-based trip reduction programs.

Employee Survey Results

The survey data was compiled by a BAAQMD approved vendor to determine if Raychem was in compliance with the 1994 BAAQMD goal of 0.87 vehicle employee ratio. Raychem's adjusted VER was 0.94. The actual VER was 0.89 and was adjusted up because of the low response rate of 58.8%. With such a low response rate it was virtually impossible to attain the BAAQMD goal. The survey result calculations are presented in the following Tables.

Table 4
Raw VER Calculation

A. Employee Days	4964
B. Vehicle Trips	4431.49
C. Clean Fuel Credits (Not applicable)	
D. Adjusted Vehicle Trips (B-C)	4431.49
E. Raw VER (D/A)	0.89

Table 5
Adjustments for Non-respondents
(under 60% peak response rate)

	Employees	Raw VER	Vehicles
Peak Period Respondents	1053 x	0.893 =	940.040
Non-respondents	738 x	1.000 =	738.000
Totals	1791		1678.040

Table 6
Adjustments for Non-respondents
(60% or higher peak response rate)

	Employees	Raw VER	Vehicles
Peak Period Respondents	n.a. x	n.a. =	n.a.
Non-respondents	n.a. x	n.a. =	n.a.
Totals			

Table 7
Net (BAAQMD Adjusted) VER

	Total Vehicles	Total Employees	Net
Net VER	1678 /	1791	0.94

The Adjustments for Non-respondents for 60% or higher peak response rate table did not apply to this Raychem site because the response rate was 58.8%. The complete transportation survey data report is attached in Appendix E.

One-way commute miles were sorted to identify program needs that are determined by distance to the work site. The majority of employees (72.3%) live within twenty miles of the site. Another statistic is the work week schedule. If the employee works a compressed work week (e.g.: 3 days/36 hours, 4 days/40 hours, 9 days/80 hours) they do not drive on those off days and they are credited to the site.

Additional information from the survey is presented in next section.

Review and Selection of Employer Trip Reduction Plan Elements

Selection of specific trip reduction strategies was based on the results from the employee transportation survey, BAAQMD recommendations, information from other programs identified in the literature review, and budgetary considerations. Existing programs and services, listed in Table 3, were included as part of the assessment but considered as baseline conditions.

The employee transportation survey data was incorporated by first reviewing the distance most employees traveled to work. As stated previously, most employees live within twenty miles. This short distance precludes a large vanpool program and is more conducive to a carpool program.

The following information is a summary of what was presented to the air district in the Employer Trip Reduction Plan. The majority of respondents (66.1%) stated irregular work hours as the primary hindrance to using an alternative

commute mode. The second highest reason employees did not use a commute alternative was inadequate transit service (44.2%). The marketing campaign targeted those people who work irregular hours by suggesting they use a commute alternative once a week. Transit is poor and Raychem is working with a neighboring company (Sun Microsystems) to solicit the transit agencies for better service.

The number one incentive desired by employees to use a commute alternative was having a guaranteed ride home program (40.4%). This was followed closely by work schedule flexibility (35.4%) and financial subsidies (32.8%). In response, Raychem implemented a guaranteed ride home program as part of the plan and although there were no direct financial subsidies due to the cost. Work schedule flexibility is available to professionals on a case by case basis. Work schedule flexibility is important to employees who need to adjust their arrival or departure times to coincide with a commute alternative such as a carpool or vanpool.

The alternative commute modes the employees stated they would be most willing to use at least once a week are

carpooling (58.9%) and telecommuting (52.2%). Raychem implemented an on-line ride-matching service as part of a pilot project with the city of Menlo Park and ETAK Corporation. The ETAK program is presented further in the implementation Section. Telecommuting is managed on a case by case basis. It was not selected as a primary program because most workers are performing manufacturing tasks and can not telecommute.

The number one factor in choosing an alternative commute mode was convenience and flexibility (87.4%). The second was travel time (69.9%). In order to address those issues, a carpool program was marketed by Raychem that highlighted the fact that most commutes would be faster because participants can use the high occupancy vehicle (HOV) lanes to save time on congested roads. In addition, carpooling was marketed as being flexible because employees can utilize it when their schedule permits.

There are twenty-one trip reduction program measures that the BAAQMD recommended in their "Guide to Employer Trip Reduction Programs." Each measure had a point value assigned to it. Employers were required to select measures

that were most appropriate for their site and attain a total point value of fifty. Table 8, Trip Reduction Measures, contains the plan elements/measures suggested by the BAAQMD and their associated point values.

Those measures were documented in the report format provided by the BAAQMD. That report is the Employer Trip Reduction Plan (ETRP). The ETRP will be referred to as the Plan in the remainder of this thesis. Eleven elements were chosen for Raychem that best fit the requirements for the BAAQMD's fifty point plan, made sense for the site economically, and best met employee need. There were several revisions of Plan elements proposed to the BAAQMD and the summary is in Appendix F.

Table 8
Trip Reduction Measures

Measure	Max. Point Value
1.1. Required Marketing	Required - no points
1.2. Optional Marketing	5 points
2.1. Required Ridematching	Required - no points
2.2. Optional Ridematching	5 points
3. Preferential Parking	5 points
4. Guaranteed Ride Home	15 points
5. Transit Ticket Sales	5
6.1. Incentives (cash and cash equivalent).	30 points
6.2. Incentives (prizes)	15 points
7. Parking Cash-Out	30 points
8.1. Parking Pricing	40 points
8.2. Transportation Allowance/Parking Pricing	40 points
9. Employer-Facilitated Vanpools	10 points
10. Compressed Work Week	20 points
11. Telecommuting	24 points
12. Bicycle Parking	4 points
13. Showers and Lockers	3 points
14. Support for Bicyclists and Walkers	3 points
15. Shuttles to Transit	8 points
16. Midday Shuttle	4 points
17. On-Site Services	6 points
18. Site Modifications	6 points
19. Clean Fuel Vehicles	2 points
20. Housing	5 points
21. Other Measures	Variable

Regulation 13, Rule 1 had two measures that were required in all programs and plans. Those components were marketing and ridematching. The required marketing measure

had three components: 1) promotion on at least a quarterly basis, 2) new employee orientation on commute alternatives and the Plan, 3) providing transit information to employees including routes and schedules for all nearby transit. The ridematching measure had two components: 1) provide ridematching service to all employees on an on-going basis and 2) follow-up with requesters.

Raychem chose to adopt the optional elements of the marketing and ridematching measures as well. In order to receive points for optional marketing Raychem was required to promote the Plan eight times per year (two points) with highly visible displays (one point) and have "special events" (one point per event; two points maximum).

Originally Raychem was anticipating that only two points would be awarded for marketing the program eight times per year. Upon negotiation with BAAQMD it was determined that an additional three points could be derived from programs that were already in place bringing the total for optional marketing to five. Those programs were the annual Bike to Work, Spare the Air, and special display programs budgeted at $4,000.

The annual Bike to Work program consists of marketing the San Francisco Bay Area Bike to Work Day. The event takes place in May and employers throughout the region participate. San Francisco Bay Area businesses and RIDES sponsor the event with prizes for registered participants.

The Spare the Air program is a voluntary program sponsored by the BAAQMD that asks employees to reduce polluting activities on smoggy days. The program is seasonal and runs from August to October. During that period the BAAQMD notifies employers by fax the day before a high air pollution day is predicted. The employer then notifies employees by the most appropriate method. Last year Raychem used electronic mail to notify employees.

The special display program is a portable kiosk that will be moved to different building lobbies and cafeterias each month. The kiosk will be eight feet high and consist of two panels three feet wide. It will have transit schedules, route maps, internal and external resources, RIDES matchlist applications, and fliers of upcoming events. Special art work was developed internally by the Raychem Communications and Design Department. This program has not

been implemented to date due to the planned changes in the CalTrain shuttle schedule in January of 1996. The cost for the final maps is about $600 and they will be printed when the shuttle schedule is finalized.

Raychem was selected by the city of Menlo Park to participate in a pilot project of the ETAK Corporation's TRIMS software demonstration project. The TRIMS pilot project was worth five points. The optional ridematching credit came from having an on-line capability to ridematch with the RIDES ridematching computer in San Francisco and to plot a commuter's path to work on multiple transit systems.

The Guaranteed Ride Home program was the best point value program for the money. It was required to be available to employees who use a commute alternative if there was a family emergency or personal illness and must be available at least four times per year for each registered employee. The point value for the program was fifteen points and has a projected budget of $2,000. The guaranteed ride home program was adopted in November of 1995.

The employer-assisted vanpool measure was chosen because of the free assistance from RIDES and vanpool

leasing vendors. The $500 for marketing was a good value to get information to employees who were interested in vanpooling. A presentation was made to interested employees by Raychem and others, mentioned above, about the costs of driving alone and what programs were available. The vanpool measure was worth four points. There was initial discussion about providing a financial subsidy to vanpool riders but the cost was not acceptable. One point would be awarded for each $10 per employee per month to a maximum of six points. In order to get full credit, Raychem would have had to give an estimated $54,000 to support five vanpools annually.

Raychem's proposed implementation of a vanpooling program is a good example of what businesses did to get points even though it may not have been appropriate for the site. In Raychem's case it was not appropriate because most employees live within twenty miles of the site. The typical vanpool commute is thirty-five to fifty miles each way.

Support for bicyclists and walkers was a relatively easy way to get points but was not considered an effective Plan measure because of safety issues on the access routes. For the cost of about $1000, Raychem issued a bike route map

to all employees via the internal mail distribution system for 1.5 points. In addition, a half point was awarded for each of the following: bicycle safety speaker, bicycle maintenance speaker, and the Raychem Mileage Club. The Raychem Mileage Club is a program designed to promote employee fitness. It awards points for miles walked, or biked on an annual basis and commute miles are eligible. Points are good towards prizes such as subscriptions to magazines and running shoes.

Shuttles to CalTrain have been provided by Raychem since 1989 and that service was incorporated into the Plan for eight points at a cost of $1,350. The city of Menlo Park manages the program and receives contributions from businesses to maintain it along with grant money from the Joint Powers Board. The Joint Powers Board operates the CalTrain and administers grant money for CalTrain shuttles. Sun Microsystems has applied for a new shuttle to service their Menlo Park site and Raychem's site at 300 Constitution Drive, Menlo Park. The Joint Powers Board funded the new shuttle for the Sun Microsystems site and Raychem is currently reviewing whether to join.

There were four points awarded for on-site services. Raychem has provided a credit union, cafeteria, photo developing service, and workout facility since 1982 and this was not considered to be an additional cost for this program. These types of on-site services are considered an incentive for employees to use a commute alternative, because they would be less likely to need a car to get to these activities.

The BAAQMD awards points for modifications to facilities that enhance employees' use of commute alternatives. The BAAQMD has a sliding scale of points up to a maximum of six points for site modifications. A sidewalk project was proposed that would connect pedestrians from just inside the main gate on the west end of the facility to Chilco Street where the CalTrain shuttle picks up riders. The project was estimated at $30,000 for six points of credit. The BAAQMD awarded three points because they did not think it was a significant modification to the site. The project was canceled in favor of a transit ticket program.

Selling transit tickets by mail was not one of the first choices for the site because of relatively poor transit access, but would have given Raychem the points needed for the Plan. Transit tickets would have been available to employees by mailing in requests to the Regional Transit Authority. On-site ticket sales were considered but there is not enough demand to support the minimum. If the $2,000 minimum is not met after a three month grace period, a $50 service fee would be charged every month. The transit ticket sales by mail was budgeted for $2,400 a year and qualified for three points.

The last measure was the Vehicle buy-back program. Vehicle buy-back is considered one of the most effective methods of getting high polluting vehicles off the roads. Vehicle buy-back was originally chosen to augment the final points needed to meet the fifty point requirement. The BAAQMD has estimated that 50% of the air pollution is caused by 10% of the cars. Most of those cars are pre-1972 vintage. One requirement of the program is that cars bought must be manufactured before 1972. Other requirements are that vehicles must have been registered in the San

Francisco Bay Area for the last two years and be in operating condition.

Raychem joined other companies in the San Francisco Bay Area to purchase high polluting vehicles and have them removed from the road. The Santa Clara Valley Manufacturing Group and Bay Area Council teamed up with the Old Vehicle Clearing House to demolish pre-1972 cars for employer-based trip reduction credit with the air district. Raychem's cost for the 300 Constitution Drive site was projected at $2,426 for four years of compliance given the employee population and VER remain stable. In the final Plan however, Vehicle buy-back was not included in the point total because of additional points that were awarded for optional marketing and transit tickets by mail measures. Raychem still elected to participate in a modified vehicle buy-back program as described in the next Chapter.

Internal Management and BAAQMD Approval

In order for any of the programs to be implemented it was necessary to get approval from both Raychem management and the BAAQMD. The Raychem management approval process

began with my manager at the time, Robert Whitehair, Director of Facilities. He gave his approval May 12, 1995 and directed me to get approval from the Raychem Menlo Park Site Council. The Menlo Park Site Council is made up of ten division managers with operating units at the site and budget authority for programs that affect multiple organizations.

The Plan was presented to the Raychem Menlo Park Site Council on June 5, 1995. After reviewing the correlation between response rate and VER results, they all committed to getting better results during the next survey. The only site that achieve the required VER was the one with the highest response rate. One division manager went as far as to say he would get a 100% return next year if it meant he would not have to contribute as much to the budget. The Council had not previously supported the program so enthusiastically in their organizations because the earlier Raychem program administrator had lost credibility with them. The earlier program administrator had misinterpreted the regulations and informed the Council that they would be

required to implement costly programs such as charging for parking.

My proposal included information about a second site in Redwood City that was similar to the one for the Menlo Park site. The third site on Campbell Avenue did not need a Plan because it met the 1994 objective. After a thorough discussion of the alternatives, they agreed to the Plan measures proposed but wanted to go slow given that the state legislature was in the process of reviewing Senate Bill 437. The Council especially wanted to wait on the site modification project to construct a side-walk at the west gate because it had the biggest cost estimate of all of the Plan measures proposed.

The Council requested a quarterly spending plan that postponed as much of the costs as possible. In addition, the budget for next year was to be allocated proportional to each operating unit's VER and population. This was noted, but was later felt to be difficult to implement because if an operating unit achieved the required VER it would be because they had spent money on Plan measures.

The next three weeks were spent revising the Plan implementation schedule and preparing for submittal to the BAAQMD. The highest ranking official at the work site was required to sign the Plan and Robert Saldich, Chief Executive Officer, did that on June 29th. The Plan documents were compiled and sent to the BAAQMD on July 20th for their review. Included was a check for $500 for Plan review as required by the regulation.

Two weeks later the BAAQMD replied that the site modification project would only be eligible for three points as opposed to the six that were anticipated. The BAAQMD representative worked closely with Raychem to resolve the point deficiency over the next six weeks.

It was determined, as presented in the section above, that Raychem was able to get the points needed at less cost than previously proposed. Three additional points for marketing activities were awarded; speakers on bicycle safety and maintenance and the Raychem Mileage Club would qualify for a point and a half; a transit ticket-by-mail program would round out the Plan with the final three points

that were required. The final Plan as approved is attached as Appendix G.

How the Plan was changed after SB 437

On October 4, 1995 Governor Wilson signed Senate Bill 437 and suspended employer-based trip reduction requirements. On October 6th the BAAQMD issued an advisory notice stating that they were immediately suspending the implementation of Regulation 13, Rule 1, "Trip Reduction Requirements for Large Employers." The notice requested that employers continue to encourage employees to use commute alternatives, because the legislation that eliminated EBTR did not provide any alternatives to solving the problems of air pollution, traffic congestion, or energy consumption.

Having anticipated this development, an alternative set of measures was prepared that would most effectively assist employees in commute alternatives at the lowest cost to Raychem. Measures that were eliminated from the BAAQMD approved Plan were: bicycle information and speaker series, and transit ticket sales by mail. The elimination of those

measures will result in an estimated expense savings of $4,100. In cooperation with the Santa Clara Valley Manufacturing Group, Raychem chose to participate in the voluntary vehicle buy-back program. A one time cost of $5,500 buys the equivalent of one ton of emissions. It is not expected that Raychem will continue to participate in the program in future years. The three versions of the Plan are presented below in Table 9, Plan Revisions and Budgets.

Table 9
Plan Revisions and Budgets

Original Plan Proposal	BAAQMD Approved Plan	Post Regulatory Final Plan
Required Marketing	Required Marketing	Required Marketing
Op. Marketing	Op. Marketing	
Required Ridematching	Required Ridematching	Required Ridematching
Optional Ridematching	Optional Ridematching	
Guaranteed Ride Home	Guaranteed Ride Home	Guaranteed Ride Home
Employer-Facilitated Vanpools	Employer-Facilitated Vanpools	
Vanpool Subsidy		
Showers and Lockers	Showers and Lockers	Showers and Lockers
Support for Bicyclists and Walkers	Support for Bicyclists and Walkers	
Shuttles to Transit	Shuttles to Transit	Shuttles to Transit
On-Site Services	On-Site Services	On-Site Services
Site Modification		
		Vehicle Buy-back*
	Transit Tickets by Mail	
Internal Budget - $129,400*	Internal Budget - $14,400	Internal Budget - $13,000

* The significantly higher projected budget was due to the vanpool subsidy ($54,000) and site modification project ($60,000). Both of those projects were rejected early in the planning stages of the program.
** The Vehicle buy-back program cost $5,500 and will only be implemented for one year.

The next Chapter describes the specifics of the Plan implementation.

CHAPTER 4

IMPLEMENTATION OF SITE SPECIFIC PLAN

Phased Roll-Out

Much of the Plan implementation occurred as it was being developed. Initially survey information and results information was provided to employees, because it was required by the regulation. After that, program information was provided in conjunction with a service becoming available at the site or timed with a regional event. This happened because of internal politics associated with implementing a new program; managers were not familiar with the Plan and were not prepared to spend money on it given the current political changes pending in Sacramento. Senate Bill 437 had been proposed and Raychem management was supporting it all along the way.

Site specific measures were adopted if funding was available and staffing capabilities permitted. After the Plan was approved by the Raychem Menlo Park Site Council and the BAAQMD, measures that required more significant expense

were scheduled for implementation as depicted in the Employer Trip Reduction Plan in Appendix G. The following is a chronology of measures as they were implemented at the site.

CalTrain Shuttle

The CalTrain Shuttle was marketed in January as a result of the schedule changing. The city of Menlo Park issues the CalTrain schedule every six months when the train schedules change. The marketing is an on-going effort, because if employees are not provided with the correct schedule information they will not be likely use the service a second time. If the new shuttle is approved for the Raychem and Sun Microsystems Sites, it will provide better service by expanding operating hours for both early workers and those who work late. In addition, the new shuttle has been scheduled to service the express trains to and from San Francisco. Some employees have complained that they take an express train to the Menlo Park train station only to wait thirty to forty minutes for the shuttle. The major drawback to joining the Sun Microsystems shuttle is that it will be

considerably more expensive. Currently, Raychem pays the City of Menlo Park $1,350 for shuttle service that does not drive through the site. It would cost $8,000 for the one Sun Microsystems shuttle.

Employee Transportation Survey / Vanpool

The employee transportation survey results and response rates were compiled and issued to the site in March of 1995. It was also in that notice that the winner of the mountain bike was announced. As described in Chapter 3, a mountain bike was randomly awarded to an employee who turned in his/her survey form within the allotted time.

Also in March was the Vanpool informational presentation. Experts from RIDES, vanpool leasing vendors, and sponsors from county programs gave a presentation in Raychem's auditorium to a crowd of about seventy-five. This amount of turn out is unusual for most programs, but Raychem has a history in vanpool programs.

Several years ago Raychem received a grant from CalTrans to operate five van pools. The management was more work than the administrator had anticipated. Employees

would call and complain about such things as making a mess in the van, chronic tardiness, even body odor. The program was canceled three years ago in 1993.

Unfortunately many of the original vanpool members were expecting Raychem to financially support the effort directly. They were not receptive to initiating new vanpools with assistance from Raychem in finding riders because no financial subsidy was available.

There was a general lack of understanding that vanpooling would actually save employees money as opposed to driving alone or even carpooling. One employee has a three year old car with over 150,000 miles on it and two more years of payments. Currently, Raychem has one active vanpool operating out of the Modesto area and even that van has riders from other businesses in the area.

Bike-to-Work

The Bike-to-Work day was on May 4th. This regional event was sponsored by the BAAQMD, RIDES, Noah's Bagels, and the Metropolitan Transportation Commission with prizes and events all over the San Francisco Bay Area. Prizes included

a trip to Hawaii which attracted a lot of attention at the site. However, due to poor access to the site, most, if not all of the participants were already commuting by bicycle. In response to some of the cyclist's concerns, a map was issued to the site that illustrated the routes available to employees.

Rideматching

In August an internal advertisement for carpooling and vanpooling went out to the site. The advertisement was distributed in a newsletter that is issued weekly to professional employees and bulletin boards throughout the site. It informed employees about the costs of driving alone and explained that carpooling even once a week can save money and time getting to work. These advertisements will continue to be sent out every six months to prompt employees who are interested.

Spare the Air

Spare the Air days began in August as well. Information about what a Spare the Air day is and how

employees will be notified was provided in the internal e-mail distribution system that is also posted on bulletin boards. Spare the Air notifications were made via the building paging systems the day before the BAAQMD predicted a high pollution day.

Guaranteed Ride Home

The Guaranteed Ride Home program was the most time consuming and most anticipated program implemented. Employees chose the guaranteed ride home program as the most likely Plan measure to get them to use a commute alternative in the survey. The program was based on a model that was implemented by the city of Menlo Park. Before the employee agreement document could be issued to the site, approval was required from the Raychem Human Resources department and internal legal council. Both of those departments were busy with other corporate business and slow to provide approval. The agreement document and sample vouchers are attached as Appendix H.

After the program documents were approved, service contracts with rental car and taxi companies were

established. The primary criteria for the vendor selection was if they could get a ride to the requesting employee within thirty minutes after receiving a call. The rental car vendor chosen was familiar with this type of service agreement. Retaining a taxi vendor was more difficult. Only one taxi company in the area was interested in this type of service agreement and thus were awarded the contract. Once the vendors were selected, Raychem purchasing department and legal staff assisted in reviewing the agreement documents. The guaranteed ride home program application forms with employee agreements were issued to the site on November 15, 1995.

Vehicle Buy-back

The most controversial post-SB 437 Plan measure was the decision to continue the Vehicle Buy-back program. Since the regulation was suspended there was no longer any reason for corporations or cities to purchase vehicles to meet regulatory requirements; as one manager put it, "Raychem is not in business to clean the air." There was pressure from the Santa Clara Valley Manufacturing Group to proceed with

the vehicle buy-back program and there were several good reasons for Raychem to participate.

First, Raychem had already paid a non-refundable $1,586.10 retainer, along with other corporations, to the Old Vehicle Clearing House to commit them to come to the San Francisco Bay Area. Second, Raychem was able to change the amount committed to in the original agreement from $10,574 for two Raychem sites to $5,500 for one ton of auto emissions. In addition to the relatively low monetary support to participate in the vehicle buy-back program, it improves public perception, is an effective method to clean the air, and it shows that corporations and cities are willing to participate in voluntary programs.

The last point is significant because the BAAQMD still needs to attain the state-mandated air standards and they will be looking at other ways to get employers to participate. Internal support was necessary from the Raychem Corporate Communications Manager to get the funding.

The program was started on October 11, 1995 at a wrecking yard in Hayward. In attendance were representatives from participating corporations, cities,

BAAQMD, Old Vehicle Clearing House, and the media. The program will run through spring of 1996 when it will be reevaluated.

CHAPTER 5

MEASURING EFFECTIVENESS

Guaranteed Ride Home Program

The Guaranteed Ride Home program got off to a slow start. In the 1994 employee transportation survey an average of 181 employees used a commute alternative every day. Since the inception of the program there have been twenty-two Guaranteed Ride Home vouchers issued. This may be attributed to poor dissemination of information. The newsletter distribution is limited to professionals on the site and is posted on bulletin boards. More likely is that employees have intentions of registering in the program but have not got around to it. As is typical of this program, there has not been any use of the vouchers for a ride home.

A second notification about the program is scheduled to be issued in February 1996. In addition to the distribution that was used previously, the Guaranteed Ride Home registration documents will be available on the portable kiosks when they are completed. Given the high level of

interest in the survey regarding the Guaranteed Ride Home program (40.4%) it is expected that registration of participants will continue to grow as employee's awareness is increased.

There has been discussion of expanding the program to employees who use a commute alternative and have to work unscheduled over-time. This may be implemented if the program is not abused.

Ridematching Study

Ridematching is one of the BAAQMD's required trip reduction measures. The criteria calls for providing a ridematching service to all employees on an ongoing basis and following-up with requesters. The type of follow-up is not specified and this thesis quantifies the effectiveness of providing varying levels of follow-up.

The Ridematching method was to divide employees who requested ridematch lists in the employee transportation survey into three groups of twenty-five and provide a different level of follow-up to each. After the employees had a chance to contact someone from their list, the number

of employees who carpooled was compiled. The first and second groups were selected randomly from ridematch requesters. The third group was selected from employees who live in Fremont and requested ridematching information at the time of the survey.

The first group received no support except that provided by RIDES. RIDES mailed out ridematch lists to requesters and followed-up with two phone calls per their standard procedure. Two months after the ridematch lists were sent out a telephone survey was conducted using the Raychem voice mail system. Out of the twenty-five employees in the group that were contacted, fourteen responded. Eight employees had not tried to contact anyone on their matchlist, four had carpooled since the matchlists were distributed, and two did not remember receiving anything from RIDES.

The second group was contacted personally and asked to participate in an internal Raychem ridematch program. Each requester was sent a ridematch list, as was done with the first group. Next they were contacted twice to find out if they needed any assistance with the information. Out of the

twenty-five employees in the group, one asked for help interpreting the information. As in group one, a voice mail survey was conducted after two months to establish the level of participation. Five employees responded to the voice mail survey and none of them had attempted to use the ridematch list in order to carpool. This illustrates that providing internal support does not result in an increase in participation over support provided by RIDES personnel.

The third group was invited to a presentation by RIDES where the benefits of ridesharing were presented and the matchlist information was reviewed. Invitations were individually mailed using Raychem's internal interoffice mail. The notices highlighted that food would be provided. At the meeting, maps were posted around the room with zones drawn around different areas of Fremont. The idea was that attendees would put a push pin in the map where they lived, realize that Raychem people lived close to them, and set up a carpool during the meeting. Out of the twenty-five employees in this group, twelve confirmed that they would attend. Four employees attended out of the twelve.

Given the poor attendance, a second meeting was scheduled and all 572 Raychem employees who live in Fremont were invited. The same offer of food was included on the invitation but ridematch lists were not generated in advance. After consulting with RIDES it was estimated that about fifty employees would attend. Out of the employees who were invited six attended and four were from the first meeting. This was discouraging but out of the six that attended four employees got together and carpooled as a result of the meetings. A follow-up established that only two of the people have continued to carpool after two months.

This method of introducing people to carpooling could be effective if there was a perceived need for commute alternatives. Most of the time employees can get to work in about twenty minutes from Fremont and do not see the advantage of sharing the ride. However, on a day when an accident occurred on the Dumbarton Bridge and some employees spent an hour and a half in their cars, eight employees requested ridematch lists.

This issue was discussed with Milt Feldstein, Air Pollution Control Officer of the BAAQMD, and his opinion was that many companies have experienced similar problems. He felt that there will not be any significant increase in the demand for carpool information from employees until the commute is so bad that employees can not stand it anymore. The data is presented in Table 10, Carpools Established After Different Levels of Support were Provided.

Table 10
Carpools Established After Different Levels of Support were Provided

Group Number	Number of Employee Responding to Follow-up	Number of Employees Carpooling
1	14	4
2	5	0
3	6	2

Parking Lot Count Study

The parking lot count study was performed to measure change in the number of cars parked on the site during the week of the employee transportation survey in 1994 verses

the first week in December of 1995 after the Plan measures had been implemented. The assumptions made were that the number of non-Raychem employee vehicles would be proportional to the number of employees on the site in a given day; the level of absenteeism would be similar per capita; and the weather would be similar during both parking lot counts.

The parking lot counts were performed by driving through the parking lots and counting all non-commercial vehicles. The counts began at nine o'clock in the morning from the east end of the site and took about thirty minutes. The data is presented in Table 11, Parking Lot Count Data.

The number of day shift employees working at the site in October of 1994 was 1837 and the average number of vehicles on the site was 1306 +/-29.5. This calculates to a ratio of 0.71 vehicles per employee. The actual ratio was 0.89 VER per the survey data. The number of day shift employees working at the site in November of 1995 was 1968 and the average number of vehicles was 1283 +/- 32.3. The calculated ratio was 0.65 vehicles per employee. Given the

standard deviation between different days, there is no significant difference between the two sample periods.

Table 11
Parking Lot Count Data

Date	Number of Cars	
10/31/94	1282	
11/1/94	1281	
11/2/94	1336	
11/3/94	1291	
11/7/94	1340	
	Average 1306	Std. Dev. 29.5
12/4/95	1329	
12/6/95	1285	
12/7/95	1261	
12/8/95	1260	
	Average 1283	Std. Dev. 32.3

If there was an actual change in commute habits by employees it would need to be much greater than it was to be evident by this sample technique. In the future, the effectiveness of the program will be based on participation in Plan elements such as rideshare matchlist requests and registered commute users through the Guaranteed Ride Home program.

Raychem's Employer Trip Reduction of the Future

Raychem implemented the Plan measures as described in Chapter 4 through the end of calendar year 1996. At that time all Plan measures were evaluated for appropriateness and effectiveness at the site. Given the voluntary regulatory environment, other businesses in the San Francisco Bay Area are continuing their plan's on a limited scale as well (Jarvis 1996). The program will be influenced by employee requests in addition to decisions made based on the transportation survey. For instance, if there was a sudden demand for vanpool information, Raychem would coordinate a meeting for the interested employees.

Other measures could be deleted from the Plan as well. The annual Bike-to-Work event may not be marketed this year if there is not any demand for it. The on-site services are reviewed by upper management each year as well and may be cut back or eliminated if the budget cut backs require it.

Staffing for the Raychem Plan will be reduced in the next fiscal year starting in July 1996. The majority of the work to implement the Plan has been completed and administrative staff will be responsible for maintaining the majority of elements that remain. The responsibility to keep current with regulations and attend business group meetings has been transferred to a site environmental technician who has primary responsibility for BAAQMD regulatory compliance. That person is expected to spend about ten percent of his/her time on employee trip reduction efforts unless management changes the priority and requests a stronger program. Previously, there was close to a full-time equivalent's worth of staffing time allocated to the trip reduction program.

CHAPTER 6

BEYOND TRIP REDUCTION: AIR QUALITY PROGRAMS IN THE SAN FRANCISCO BAY AREA

Although air quality has improved in the San Francisco Bay Area, it is going to get worse if steps are not taken to reduce the amount of emissions from vehicles. The major industrial polluters have been controlled to a considerable extent through extensive regulations and now the focus has changed to the automobile. Vehicle miles traveled has outpaced growth rate in California by a factor of three over the past few years and will out pace efforts to reduce emissions (Loudon 1992).

A symptom of that was the high levels of ozone in the region over the last year (BAAQMD 1995). The current theory about the ozone exceedences is that it was the result of an atmospheric anomaly but experts are cautious about dismissing it (Jarvis 1996). If levels of ozone continue to exceed federal standards the attainment status could be revoked resulting in possible highway funding reductions.

This Chapter answers the research questions, presents a summary of this thesis' findings, current programs, what the future may hold in store for air pollution control and congestion reduction, and recommendations for action.

Summary of Thesis Findings

In Chapter 1, five questions were posed for this thesis project. This section is a summary of the answers to those questions.

The first questions asked how a large company would implement an effective employer-based trip reduction program. At Raychem the program was implemented by first collecting data through an employee survey and benchmarking successful programs from the BAAQMD. Employees were surveyed to determine how they get to work and to find out what commute modes they would try. The survey also established what the commute distances were and where the commutes originated so applicable plan measures could be implemented. This was accomplished through a census type survey. A random survey technique was available but the census method was preferred because it provided each peak

period employee to contribute to the suggestions that were considered for implementation. Raychem worked closely with the regional air quality management district and employer associations to optimize the probability of a successful program. BAAQMD sponsored training provided information about setting up programs that are appropriate for individual sites.

The second question asked what strategies are effective in changing commuter habits. The programs that are most effective at the Raychem site are the guaranteed ride home, ridematching (matchlists for carpoolers), and CalTrain shuttle. The business community expected fast results that could be measurable in terms of traffic congestion and air quality. Given the experiences in southern California, a two percent change in commute behavior is considered a success. There is potential for improvement but a significant change is not expected in the near future.

The third question asked if the Bay Area Air Quality Management District's goals were appropriate and achievable. The essence of this question was asking if the regulation was cost effective. The BAAQMD goals were based on an

evolution of solutions. The Clean Air Plan outlines several programs such as fuel reformulation and stringent controls on industrial emissions that have already been implemented to a large degree. The next logical step for the regulators was to control the amount of commuter traffic and the easiest way for them to do that was to have the employers do it. Employers rarely view trip reduction as a business issue and were overwhelmed with the requirements put on them.

The primary problem was that Regulation 13 mandated employers to implement a burdensome bureaucratic program that may not have been appropriate for their site. The flexibility built into the regulation was overshadowed by mandated surveying and reporting.

The fourth question asked what elements of the thesis are transferable to other companies and appropriate for regulatory review. Elements that would be transferable to other companies include the planning process, ridematching study, and guaranteed ride home program. Using data from employee surveys is something that should be included in all site specific planning activities. The employee survey

provided commute distance information which helps determine which plan elements will be most successful. In addition it allowed employees to provide input to the process. This helps build ownership in the program and acts as a marketing tool.

The ridematching study illustrated that it is not easy to change commute behavior. In that study only six employees out of over five-hundred attended a presentation on commute alternatives. Others attempting a similar presentation should consider what it takes to get their employees to a meeting of this nature. Including ridematching information with other programs that have tangible incentives will improve attendance. Employees at the Raychem site that were targeted are not concerned about their commutes at this time. Currently commuters are not paying much to drive alone and it does not save a significant amount of time to use a commuter alternative such as carpooling. Perhaps when they are delayed in traffic or have to pay an extra toll on the Dumbarton Bridge during peak periods will they take an interest in commute alternatives.

The guaranteed ride home program at Raychem is off to a great start. This program is considered to be one of the most cost effective ways to get people to use a commute alternative industry wide. The interest level is high and the registration at the site is continuing as this thesis is being written. The cost is very low because it is very rare for a commuter to actually need an emergency ride home. The employees who have registered expressed relief about not worrying about how to get home when their child is ill at school and they need to pick them up on a day when they took the train to work.

Question five asked how employers are responding to the suspension of the mandatory trip reduction regulation. The immediate response was to suspend activities that were not adding value to trip reduction programs. The primary one was the completion of employee surveys and BAAQMD Employer Trip Reduction Plans. Raychem's Employer Trip Reduction Plan is attached in Appendix G. There was concern however, that the BAAQMD would implement a new requirement that may be even worse as was done in southern California with the South Coast Air Quality Management District Rule 2202.

The Santa Clara Valley Manufacturing Group campaigned for the vehicle buy-back program to show the BAAQMD that businesses are willing to participate in air quality programs voluntarily and that they do not need any further regulations or rule making. Raychem is participating in the vehicle buy-back program with $5,500. That is the amount required to buy enough cars to eliminate a ton of emissions. Raychem has committed to participate in that program for one year.

The Business Air Quality Policy Committee is a coalition of members from the Santa Clara Valley Manufacturing Group and the Bay Area Council and is working on programs to maintain voluntary programs that satisfy the BAAQMD. The current proposal is to form a Bay Area Clean Air Partnership with the BAAQMD. The draft under current consideration includes:

1. Promote greater awareness of air quality issues, particularly during critical ozone season;
2. Provide encouragement for use of public transit, telecommuting and other alternatives to the car on "Spare the Air" days;
3. Permit employers and BAAQMD to get credit for emission reductions achieved in voluntary, un-regulated programs, and;
4. Prevent future exceedences of Federal ozone standards.

(Coleman, 1996)

These types of voluntary programs provide businesses with the flexibility to participate as they feel is appropriate. The primary goal that the BAAQMD is trying to achieve is to meet the ozone standard. This is because the San Francisco Bay Area had an unexpected number of exceedences last year. The "Spare the Air" campaign consists of the BAAQMD notifying employers the day before an expected high ozone level is anticipated so the employers can notify their employees. The employees are asked to try and use a commute alternative the next day and avoid ozone creating activities such as using gas powered lawn equipment. At Raychem, the landscaping department curtails use of all non-essential gas powered equipment during "Spare the Air" day alerts.

There are many programs that can accomplish a reduction in employee commute trips and ultimately an improvement in air quality and traffic congestion. Employee trip reduction is not solitary solution. Multiple attacks on air pollution at many levels will be required in the future to maintain the quality of air that we have and with the programs of the future it is hoped to improve it.

The Air Resources Board, Metropolitan Transportation Commission, and BAAQMD are implementing additional programs that could have a significant effect on air quality. The following Sections describe those regional programs.

Reformulated Fuels

Beginning this Spring, cleaner burning fuels will be pumped at gas station throughout California. The California Air Resources Board has predicted these reformulated fuels will reduce the amount of air pollution generated by gasoline burning engines by three billion pounds per day (Western States Petroleum Association 1995).

Tests have shown that engines will perform as well on these reformulated fuels as they did previously. The cost at the pump is expected to increase five to fifteen cents per gallon (California Air Resources Board 1995). The petroleum industry was against the reformulating because of the research and development costs that have gone into the program. The California Air Resources Board has supported less polluting fuels because it is an effective way to

decrease air pollution in compliance with the State Implementation Plan.

Zero Emission Vehicles

Until November of 1995 the California Air Resources Board (CARB)mandated that two percent of the automobiles offered for sale in California shall be Zero Emission Vehicles (ZEVs) in the year 1998. The CARB decided that the technology would not be ready by that time and has rescinded the order for 1998 but that number increases to five percent in the year 2001 and to ten percent in 2003 and there are no plans to remove those deadlines.

Current battery technology is not developed enough to provide the level of performance consumers would be willing to tolerate. The maximum range in about one-hundred miles and the top speed of the production vehicles in sixty-five miles per hour. In addition, recharging requires up to eight hours and lead-acid batteries are expected to recharge five-hundred to two-thousand times before requiring to be replaced resulting in a relatively short life span (Mangels 1995).

The automobile industry is planning to introduce electric vehicles to the market slowly until the technology can make it attractive because of competitive cost and performance.

Market-Based Pricing

Market-based pricing of transportation is charging for the use of a commodity in high demand. An example would be to charge a premium toll price during peak commute hours on the San Francisco Golden Gate Bridge. Market-based solutions have been the preferred choice by many individuals in the transportation industry.

There are strong political pressures against market-based solutions because of the disparity towards low income citizens. It would be politically unpopular if only the rich could get to work on time. The San Francisco Bay Area Council conducted a poll of residents, however, and found that nearly 60% of those who responded were in favor implementing congestion management pricing on the Bay Bridge (Bay Area Council 1995). This congestion management strategy has been proposed by the Metropolitan

Transportation Agency and the Association of Bay Area Government as well.

The proposal would consist of charging an additional dollar during peak periods while continuing to allow carpools and vanpools to cross free of charge. Low income individuals would be eligible for relief of the increase and the additional funds would be used for transit alternatives on the same route.

In southern California the first fully-automated toll road was opened December 27, 1995 (Haldane 1995). The privately-owned toll road runs ten miles through some of the worst traffic in Orange County near Los Angeles. Customers who would like to use the toll road must register and receive a transponder that attaches to their vehicle and debits an account automatically when they drive by sensors along the way. During peak periods of congestion the toll road is expected to save twenty minutes at a cost of $2.50. During non-peak periods the same distance costs twenty-five cents (Haldane 1995). The San Francisco Bay Area does not have any plans at this time to allow construction of a

private toll road but the project in Orange County will be monitored for its effectiveness.

Other market-based solutions include charging owners of high polluting cars more to register their vehicles, increasing the level of enforcement on the emissions inspection program, and charging a fee for miles driven. Another program, that has generated tremendous controversy, is the Parking Cash-Out program.

Parking Cash-Out

Parking cash-out has been documented as the most effective way to motivate employees to use a commute alternative in many studies. It was internationally recognized at the Rio de Janeiro Climate Action Plan Change Committee program to bring air pollutants down to 1990 levels by the year 2000. It was also the program most feared by employees at Raychem.

The reason for the fear is that employees would be charged to park at work. The charge is based on what the space could lease for and can cost over one-hundred dollars per month in some cities. The real problem with parking

cash-out is the federal Internal Revenue Service code. Section 132(f)(4) states that if an employer does not provide cash back for employees who use a commute alternative, they are exempt from the regulation. On the other hand, if a subsidy is offered then that subsidy must be available to all employees as taxable income. Section 451 furthers the disincentive by imposing a tax if an employee has a choice to use a commute alternative and receive the subsidy or to park and not receive it. This is otherwise known as constructive receipt (Smith 1995). These issues are under review by the Internal Revenue Service.

The result is that employers who are not located in highly-congested cities where parking is expensive and scarce are doing nothing. There is no motivation to change; based on current tax code there is a distinct disincentive for reform.

Remote Sensing

Remote sensing is a program that identifies gross polluting cars as they drive by a check point. It has been proposed that employers begin such programs at their sites

but the costs and internal politics are beyond the scope of what most companies are willing to participate in. The BAAQMD has recently implemented their own remote sensing program.

Starting in January of 1996 the BAAQMD will have a remote sensing unit set up that monitors vehicles as they drive by. It will capture license plate numbers of offenders on video tape and if they are spotted three times, they are issued a citation by mail. This program is being watched closely by other air districts and will probably spread if it is effective.

The Next Employer-based Trip Reduction Programs

Employer-based trip reduction will continue without regulations mandating programs or deadlines. The San Francisco Bay Area has many large corporations who have always had comprehensive programs. Examples include such companies as Hewlett-Packard, Locked Martin, Bank of America, and Chevron.

The problem is that small companies have never had trip reduction programs. This is largely due to the fact that

they do mot participate in as many civic activities as larger companies because they do not have the staff. There were some creative programs proposed by small businesses that may have had a significant impact on trip reduction. Because of the smaller size and less internal bureaucratic barriers, programs such as time off with pay, financial subsidies, telecommuting, and compressed work week would have been more likely to be implemented by small companies.

There are opportunities for small companies to benefit from the large ones. Examples of such programs include sharing a shuttle to transit stations and hosting commuter fairs at large companies and inviting smaller neighbors to attend. Additional research should be performed that identifies programs that provide the most synergistic effects of corporate neighbors. One possibility would be for Raychem and Sun Microsystems to link their ridematching databases and make them available to neighboring businesses so employees could search for carpool members on their computers from their own offices. Another area that is often supported is use of mass transit. Information about

transit can be provided at low cost but the service is unlikely to improve.

Regional transit systems are relied upon to do whatever they can, but their budgets are being cut or eliminated at what seems an accelerating rate. Last year the California State Supreme Court overturned Measure A in Santa Clara County because it did not have the 66% voter approval needed for passage. This was devastating to the south San Francisco Bay area because that money was slated for major transit improvements throughout the region. In addition, the federal transit budget has been reduced by 50% (Jarvis 1996).

Transportation service agreements between several small companies have been successfully implemented and that trend will increase once the perceived need is established and employees demand it.

Recommendations for Action

In order for trip reduction to be effective it will have to be based on a market solution that is backed with demand-side incentives. Market-based solutions that could

be effective in the near future include the increasing of toll charges during peak periods, taxing drivers at the gas pump, and strictly enforcing emissions regulations through the smog check program. The gas tax issue is an important one.

Currently it is less expensive to buy a gallon of gas than it was in 1978 (Hirten 1995). The federal funding of the highways program has created unrealistic expectations from drivers. In 1994 voters turned down proposition 185 that was designed to improve infrastructure and provide operational improvements. This illustrates that the public will need an education about how much it costs to have a freeway before they will be willing to vote a new tax into effect. This would require a regional marketing campaign to inform and educate residents.

RIDES has demonstrated this with their Commute Profile '95 report. They documented that there is a association between people knowing about commute alternatives and using them. It seems simple but this basic fact will continue to be the core of the transportation movement in the years to come. Business organizations such as the Santa Clara Valley

Manufacturing Group will be an important part of the education effort by encouraging companies to participate in voluntary programs.

Voluntary programs will also be a major part of businesses contribution to the trip reduction effort. Program that businesses are likely to continue supporting are the guaranteed ride home and seasonal marketing efforts such as the Spare the Air program. Some businesses will continue to support the vehicle buy-back program, but only if it looks like the regulations in other areas will be held in check because of it. The primary driver for companies to continue their programs will be because the employees will demand them. At Raychem it would be politically difficult to discontinue the guaranteed ride home program, because the employees want it and now they expect it.

The statutory goal of a 25% decrease in the vehicle-employee ratio (VER) will be revisited at the state level in the California Clean Air Act and in the federal Clean Air Act. The number has been challenged as being arbitrary and unsupported in its ability to reduce air pollution or congestion in any significant way. Mandating a VER does not

take into account existing local transit or ridesharing conditions. It also does not address that 10% of vehicles on the road are commonly known to cause 50% of the air pollution.

The employer-based trip reduction program has been compared to the anti-smoking movement in its infancy. This wave of activity is working to provide awareness to many people who still do not think air quality or congestion is a problem. As the information continues to be disseminated and the freeways become more congested, people may turn to commute alternatives. Commuters have shown a high tolerance to the gradual increase in the time it takes to get to work however, and if significant efforts are not made in public education, the San Francisco Bay Area is destined to be the next Los Angeles.

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Appendix A

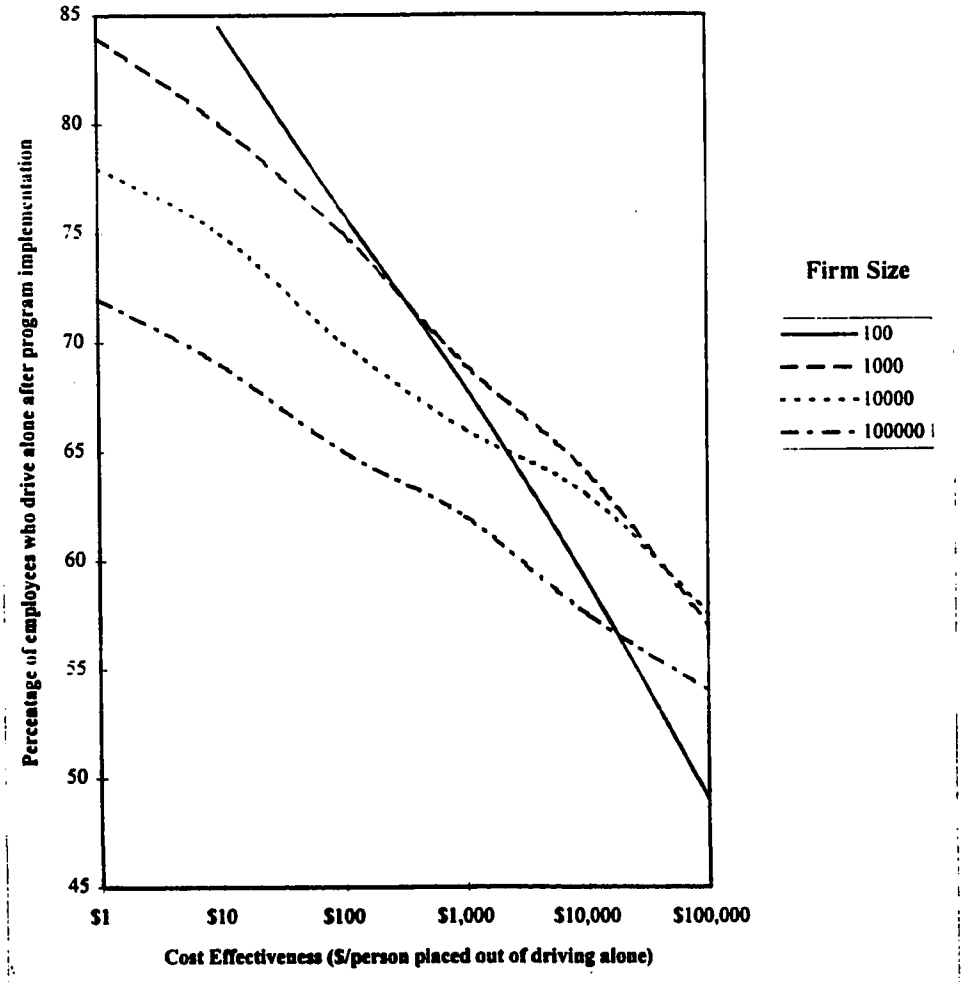
Comparison of Federal and State Air Quality Standards*

Pollutant Averaging Time	Federal	State	Objective
Ozone			To prevent eye irritation,
1-hour	0.12 ppm	0.09 ppm	breathing difficulties
Carbon Monoxide			To prevent carboxyhemoglobin
8-hour	9.3 ppm	9.0 ppm	levels greater than 2%.
1-hour	35 ppm	20 ppm	
Nitrogen Dioxide			To prevent health risk and
Annual	0.05 ppm	-	improve visibility.
1-hour	-	0.25 ppm	
Sulfur Dioxide			To prevent increase in
Annual	0.03 ppm	-	respiratory disease , crop
24-hour	0.14 ppm	0.05	damage and odor problems.
1-hour	-	0.25 ppm	
Sulfates	-	0.025 ppm	To improve visibility and
24-hour			prevent health effects.
PM_{10}**			To improve visibility and
Annual mean	0.050 ppm	0.030 ppm	prevent health effects.
24-hour average	0.150 ppm	0.050 ppm	
Lead			To prevent health problems.
30-day	0.050 ppm	0.030 ppm	
Calendar quarter	0.150 ppm	0.050 ppm	
Hydrogen Sulfide			To prevent odor problems.
1-hour	-	0.03 ppm	
Vinyl Chloride			To prevent health problems.
24-hour	-	0.010 ppm	

* Bay Area Air Quality Management District, 1993.
**Particulate matter ten microns or less in size.

Appendix B

Cost Effectiveness of Ridesharing Programs in Southern California



Source: Adopted from Transportation Research Board. 1990. Transportation Management, HOV Systems, and Geometric Design and Effects 1990. Washington, D.C.: National Research Council

Appendix C

Letter from Raychem Chief Executive Officer endorsing program and survey

Raychem

Raychem Corporation
300 Constitution Drive
Menlo Park, CA 94025-1164

Telephone 415/361 3333

Date **October 24, 1994**

Memo To **All Employees**

From **R. J. Saldich**

Subject **Transportation Survey**

As you are all aware, transportation problems continue to rank among those of highest concern to Bay Area residents. Increasingly heavy traffic, lengthy delays and harrowing trips to work threaten to impact our high quality of life. Raychem unfortunately is not immune from these problems - it is becoming common for our employees to spend one, two or more hours on the road each day.

Regionally, Raychem continues to work for transportation solutions through interactions with governmental agencies and by funding certain transportation programs. This work will lead to improvement in our standard of living. It also reflects our highest concern for our people, communities and environment.

To better understand some of the issues you face in getting to work, we are conducting a transportation survey of all day shift employees during the first week of November. This survey is also being conducted to meet the requirements of the Bay Area Air Quality Management District (BAAQMD). The information we gather will be used to improve Raychem's Transportation Management Program.

About the first of November, you will receive an "Employee Transportation Survey" form in the company mail. It is important to the Raychem community that these forms be completed and returned promptly. A 100% return rate is essential to our efforts. That way we can establish a baseline of the ways you are getting to work, and we will have accurate input that will help us develop alternative commute methods.

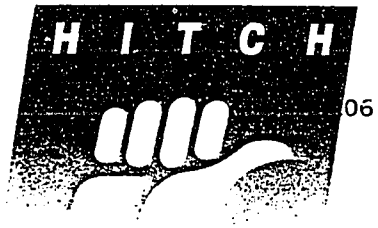
Our strategy for a 100% return rate is simple: draw upon employee qualities that have made Raychem a success, so that we can help you find the resources you need to do your job better.

Please take a few minutes in November to complete the survey. Your employee relations manager has additional information available.

Appendix D

Employee Transportation Survey with cover letter

Raychem



Date: October 31, 1994

To: All Dayshift Employees

RIDESHARE
FOR CLEAN AIR

From: Mark Burriss,
Employee Transportation Coordinator

Subject: Employee Transportation Survey

Please complete the attached Employee Transportation Survey. The survey asks you to describe your means of transportation to work each day this week (Monday, October 31 through Friday, November 4). Return the completed survey to your employee representative* by Tuesday, November 8, 1994.

It is important that you complete the survey. The information you provide will be used to help Raychem develop an effective Commute Alternatives Program and to comply with the employer trip-reduction requirements of the Bay Area Air Quality Management District. **Your responses will be kept confidential.**

If you have any questions, please consult your employee representative or call me at extension 2978.

If you are interested in receiving a free ridesharing matchlist with information on potential carpool and vanpool partners, please complete the optional Carpool/Vanpool Information section at the end of the survey form.

If you did not report to work at all during the survey week, still fill out the survey. On the first page, answer Questions A through E, marking response #5 for Question C and response #12 or #13 for Question E. Skip Questions F through I. On the second page, answer questions J through M and, if you wish, complete the Carpool/Vanpool Information section at the bottom of the page.

We will provide the results of the survey to all employees as soon as they are available. Thank you for you cooperation.

If your survey is received by November 8, 1994, you will be eligible to win a new mountain bike!

* If you do not know who your employee representative is, you can call your representative at the extension listed under "Employee Representatives" in the yellow section of the Raychem Telephone Directory.

Divisional Human Resources Staff

Division	Name	Mail Stop	Phone No.
Thermofit	Monique Smith for	103/7930	4516
	Sharon Managan	119/6360	2953
Wire & Cable, Medical	Maureen Ickes, HRM	203/6733	2912 or 6798
ICD, Devices	Miiko Fung, HRM	515/6733	6759
Polyswitch	Suzie Shah, HRM	109/6753	3051
Technology Sector	Suzanne Bloom Edises HRM	122/6834	5815
	Jan Difu	122/6834	5418
EPD, Surge Arrestors	Carolyn Bailey, HRM	111/6360	3256
Corporate Admin, F&A, Legal, IT	Anne Parry	111/8610	7852
Chemelex	Lynne Edwards HRM	621/8597	2905
	Susan Peterson	621/6484	6403
Site Services	Joy Mar, HRM	110/8406	2056
	Julie Garcia, HR	110/8406	3453
Ultratec, Telecom Menlo Park, CA	Juan Rios, DHRM	543/6360	6750
	Maria Gil, HR	543/8465	3717

EMPLOYEE TRANSPORTATION SURVEY

Please complete this confidential survey describing your commute during the "survey week" of Monday, October 31, 1994 through Friday, November, 4, 1994.

Return the survey to your Employee Representative by Tuesday, November 8, 1994.

Your name: _____ **Mail Stop:** _____ **Work phone:** _____

A. What is your home postal ZIP code? _____

B. What is the distance one-way from your home to your work site? _____ **miles**

C. Describe your work schedule *during the survey week.* (Check one response)

1. ☐ Full-time (5 or more days per week)
2. ☐ Compressed work week (3/36, 4/40, 9/80)
3. ☐ Part-time, 20 hrs or more per week
4. ☐ Part-time, less than 20 hrs per week
5. ☐ Did not work during survey week
6. ☐ Other (describe) _____

D. What time did you usually start work during the survey week? _____ (Time) ☐ am ☐ pm

E. How did you travel to work each day during the survey week? Please write the appropriate number for each day in the boxes below. One number per box. If you used more than one means of transportation during the trip to work, choose the number which accounts for the longest distance of your trip.

COMMUTE MODES

1. Drive Alone
2. Carpool (2-6 people)
3. Vanpool (7-15 people)
4. Public transit
5. Club bus/buspool
6. Motorcycle/Moped
7. Bicycle
8. Walk
9. Other (describe) _____

REASONS FOR NOT REPORTING

10. Compressed work week day off
11. Work at home/telecommute
12. Time off (regular day off, vacation, sick, jury)
13. Work or travel off-site

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
☐	☐	☐	☐	☐	☐	☐

F. *If you commute in a carpool or vanpool,* how many people, including the driver, are usually in the vehicle? _____ **(Give one number only)**

G. *If you commute by public transit (bus, rail, ferry),* do you normally drive to the transit stop or station? (Check one)

1. ☐ Yes 2. ☐ No 3. ☐ Does not apply

H. *If you are a passenger in a carpool, vanpool, or buspool,* do you normally drive to the pick-up point? (Check one)

1. ☐ Yes 2. ☐ No 3. ☐ Does not apply

I. *If you drive to work,* what kind of fuel does your vehicle use? (Check one)

1. ☐ Gasoline 2. ☐ Diesel 3. ☐ Other (describe) _____

Continue survey on reverse

***If you drive a child more than half the distance to work (e.g.: daycare, school), you qualify for the carpool mode.**

J. **What factors are most important to you in choosing your means of transportation to work?** (Check up to three)

1. ☐ Travel time
2. ☐ Cost
3. ☐ Convenience/flexibility
4. ☐ Comfort and safety
5. ☐ Reducing pollution, conserving energy
6. ☐ Ability to make stops en route

K. ***If you usually drive alone to work,*** **what is preventing you from using a commute alternative such as ridesharing, transit, bicycling, or walking?** (Check up to three)

1. ☐ Transit service is not adequate
2. ☐ Difficult to find others to rideshare
3. ☐ Work late/irregular hours
4. ☐ Cannot get home in an emergency
5. ☐ Poor bicycle or pedestrian access
6. ☐ Use my car on the job
7. ☐ Need to make stops en route
8. ☐ Prefer to drive my own car

L. ***If you usually drive alone to work,*** **would you be willing to use any of the following commute alternatives one or more days per week?** (Check all that apply)

1. ☐ Carpool
2. ☐ Vanpool
3. ☐ Transit
4. ☐ Bicycle
5. ☐ Walk
6. ☐ Telecommute

M. ***If you usually drive alone to work,*** **which of the following incentives would encourage you to use a commute alternative?** (Check up to three)

1. ☐ Financial subsidies
2. ☐ Guaranteed ride home in an emergency
3. ☐ Awards/prizes
4. ☐ Sale of transit passes at work
5. ☐ Assistance with transit information
6. ☐ Shuttle from transit station to work
7. ☐ Preferred parking for carpools/vanpools
8. ☐ Assistance finding a carpool/vanpool
9. ☐ Bicycle lockers/showers at work
10. ☐ Better bicycle/pedestrian access
11. ☐ Flexibility of work schedule
12. ☐ On-site services (e.g. ATM Machine)
13. ☐ Other (describe) _____

Comments: _____

Yes, I want free Carpool/Vanpool Information... Complete this optional section to receive a list of neighbors and co-workers who want to share the ride to work.

Name (please print) _____ **Home Phone ( )** _____

Home Address (include apt. #) _____

(Home Address will remain Confidential)

Nearest Cross Street _____ **Home City** _____ **Home Zip Code** _____

Employer _____ **Work Phone ( )** _____

Work Address _____

Nearest Cross Street _____ **Work City** _____ **Work Zip Code** _____

Please check as many as apply:

- ☐ I want to add passengers to my car or share driving
- ☐ I want to get information about becoming a vanpool driver or backup driver
- ☐ I want to get into a carpool
- ☐ I want to join a vanpool as a passenger

What time do you... ***Start Work:*** _____ (hours) : _____ (minutes) ***Leave Work:*** _____ (hours) : _____ (minutes)

Are the hours you work flexible at all? ☐ Yes ☐ No ***By how much?*** _____ (minutes)

Return completed survey to your Employee Representative or the delegated person on list.

Appendix E

Survey Data Report

BAAQMD 1994 Employee Transportation Survey Results

Raychem Corporation - Main Site
70002

TABLE 1
Overall Survey Response

Total Employees	n.a.
Questionnaires Returned	
Total Non-respondents	
Employee Response Rate	

TABLE 2
AM Peak Survey Response *

Peak Employees	1837
Peak Questionnaires Returned	1110
Peak Non-respondents	727
Peak Employee Response Rate	**60.4%**

*Peak employees started work between 6 a.m. and 10 a.m. on at least one weekday during the survey week and and worked at least 20 hours during the survey week.

TABLE 3
Vehicle Employee Ratio (VER)*

BAAQMD Adjusted VER	**0.94**
1994 VER Goal	0.87
Raw VER	0.89

*Detail VER calculation is TABLE 7 on Pages 3-4

TABLE 4
Usual Work Start Time (Mon. - Fri.)

		%
12:00 - 5:59 AM	24	2.2
6:00 - 6:29 AM	95	8.8
6:30 - 6:59 AM	109	10.0
7:00 - 7:29 AM	220	20.2
7:30 - 7:59 AM	184	16.9
8:00 - 8:29 AM	335	30.7
8:30 - 8:59 AM	78	7.1
9:00 - 10:00 AM	39	3.6
10:01 - 11:59 AM	2	0.2
12:00 - 2:59 PM	1	0.1
3:00 - 5:59 PM	1	0.1
6:00 - 11:59 PM	2	0.2
Total	1091	100.0

Prepared by:
Cutten Consulting & Training
Menlo Park, California

BAAQMD 1994 Employee Transportation Survey Results

Raychem Corporation - Main Site
 # 70002

TABLE 5
Daily Commute Modes: All Respondents

	Mon.	%	Tues.	%	Wed.	%	Thur.	%	Fri.	%	Week Total	%
Drive alone (SOV)	840	75.7	829	74.7	839	75.6	848	76.4	835	75.2	4191	75.5
Non-response SOV	3	0.3	0	0.0	1	0.1	0	0.0	1	0.1	5	0.1
Carpool	158	14.2	174	15.7	169	15.2	171	15.4	167	15.0	839	15.1
Vanpool	1	0.1	1	0.1	2	0.2	2	0.2	2	0.2	8	0.1
Public Transit	2	0.2	3	0.3	3	0.3	7	0.6	4	0.4	19	0.3
Buspool	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Motorcycle/moped	5	0.5	4	0.4	3	0.3	5	0.5	3	0.3	20	0.4
Bicycle	7	0.6	9	0.8	8	0.7	6	0.5	12	1.1	42	0.8
Walk	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Other	2	0.2	1	0.1	1	0.1	3	0.3	2	0.2	9	0.2
CWW day off	5	0.5	2	0.2	0	0.0	2	0.2	7	0.6	16	0.3
Telecommute	4	0.4	1	0.1	0	0.0	2	0.2	5	0.5	12	0.2
Time off	49	4.4	41	3.7	31	2.8	25	2.3	35	3.2	181	3.3
Off-site	34	3.1	45	4.1	53	4.8	39	3.5	37	3.3	208	3.7
Total	1110	100.0	1110	100.0	1110	100.0	1110	100.0	1110	100.0	5550	100.0

TABLE 6
Daily Commute Modes: 6 - 10 AM Peak Respondents

	Mon.	%	Tues.	%	Wed.	%	Thur.	%	Fri.	%	Week Total	%
Drive alone (SOV)	808	76.7	797	75.7	806	76.5	817	77.6	802	76.2	4030	76.5
Non-response SOV	2	0.2	0	0.0	1	0.1	0	0.0	1	0.1	4	0.1
Carpool	153	14.5	171	16.2	164	15.6	166	15.8	163	15.5	817	15.5
Vanpool	1	0.1	1	0.1	2	0.2	2	0.2	2	0.2	8	0.2
Public Transit	2	0.2	3	0.3	3	0.3	7	0.7	4	0.4	19	0.4
Buspool	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Motorcycle/moped	5	0.5	4	0.4	3	0.3	5	0.5	3	0.3	20	0.4
Bicycle	7	0.7	9	0.9	8	0.8	6	0.6	12	1.1	42	0.8
Walk	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Other	2	0.2	1	0.1	1	0.1	3	0.3	2	0.2	9	0.2
CWW day off	5	0.5	2	0.2	0	0.0	1	0.1	6	0.6	14	0.3
Telecommute	4	0.4	0	0.0	0	0.0	1	0.1	5	0.5	10	0.2
Time off	38	3.6	29	2.8	20	1.9	14	1.3	24	2.3	125	2.4
Off-site	26	2.5	36	3.4	45	4.3	31	2.9	29	2.8	167	3.2
Total	1053	100.0	1053	100.0	1053	100.0	1053	100.0	1053	100.0	5265	100.0

BAAQMD 1994 Employee Transportation Survey Results

Raychem Corporation - Main Site
 # 70002

TABLE 7
Vehicle Employee Ratio (VER) Calculation

	Mon.	Tues.	Wed.	Thur.	Fri.	Survey Week Total	Vehicle Factor	Vehicle Trips	Mode Split %
Drive alone*	810	797	807	817	803	4034	1	4034.00	81.3
Carpool w/ 2	116	132	123	123	123	617	1/2	308.50	12.4
Carpool w/ 3	18	23	23	23	21	108	1/3	36.00	2.2
Carpool w/ 4	7	7	7	7	7	35	1/4	8.75	0.7
Carpool w/ 5	1	1	1	1	1	5	1/5	1.00	0.1
Carpool w/ 6	0	0	0	0	0	0	1/6	0.00	0.0
Carpool default	11	8	10	12	11	52	1/2.3	22.61	1.0
Vanpool w/ 7	0	0	0	0	0	0	1/7	0.00	0.0
Vanpool w/ 8	0	0	0	0	0	0	1/8	0.00	0.0
Vanpool w/ 9	0	0	0	0	0	0	1/9	0.00	0.0
Vanpool w/ 10	0	0	0	0	0	0	1/10	0.00	0.0
Vanpool w/ 11	0	0	0	0	0	0	1/11	0.00	0.0
Vanpool w/ 12	1	1	1	1	1	5	1/12	0.42	0.1
Vanpool w/ 13	0	0	0	0	0	0	1/13	0.00	0.0
Vanpool w/ 14	0	0	1	1	1	3	1/14	0.21	0.1
Vanpool w/ 15	0	0	0	0	0	0	1/15	0.00	0.0
Vanpool default	0	0	0	0	0	0	1/10	0.00	0.0
Transit	2	3	3	7	4	19		0.00	0.4
Buspool	0	0	0	0	0	0		0.00	0.0
Motorcycle	5	4	3	5	3	20	1	20.00	0.4
Bicycle	7	9	8	6	12	42		0.00	0.8
Walk	0	0	0	0	0	0		0.00	0.0
Other	2	1	1	3	2	9			
CWW day off	5	2	0	1	6	14		0	0.3
Telecommute	4	0	0	1	5	10		0	0.2
Time off	38	29	20	14	24	125			2.5
Off-site	26	36	45	31	29	167			
Total	1053	1053	1053	1053	1053	5265			
- other,time off,off-site	66	66	66	48	55	301			
Employee Days	987	987	987	1005	998	4964		4431.49	100.0

*Includes non-response SOVs

Peak Response Rate Calculation

A. Total peak employees at this work site		1837
B. Number of surveys distributed		1837
C. Total valid responses		1099
D. Number of non-respondents (B - C)		738
E. Excluded responses (E1 + E2 + E3)		46
E1. Worked under 20 hours	2	
E2. Started work outside peak period	30	
E3. Did not work during survey week	14	
F. Peak period respondents (C - E)		1053
G. Total potential respondents (D + F)		1791
H. Peak Response Rate (F / G x 100)		**58.8%**

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Raychem Corporation - Main Site
 # 70002

TABLE 7 (continued)
Vehicle Employee Ratio (VER) Calculation

Raw VER Calculation

I. Employee days (total from Page 3)	4964.00
J. Vehicle Trips (total from Page 3)	4431.49
K. Clean fuel credits (not applicable)	
L. Adjusted vehicle trips (J - K)	4431.49
M. Raw VER (L / I)	0.89

Adjustments for Non-respondents (under 60% peak response rate)

	Employees		Raw VER		Vehicles
Peak Period Respondents	1053	x	0.893	=	940.040
Non-respondents	738	x	1.000	=	738.000
Totals	1791				1678.040

Adjustments for Non-respondents (60% or higher peak response rate)

	Employees		Raw VER		Vehicles
Peak Period Respondents	n.a.	x	n.a.	=	
1/2 Non-respondents	n.a.	x	n.a.	=	
1/2 Non-respondents	n.a.	x	1.000	=	
Totals					

Net (BAAQMD Adjusted) VER

	Total Vehicles		Total Employees		Net
Net VER	1678	/	1791	=	0.94

Required 1995 Reduction in Daily Vehicle Trips

Net VER	0.9369
-	
Target 1995 VER	0.83
VER Gap	0.1069
x	
Peak Employees	1791
Daily trips to eliminate*	192

* Negative number exceeds BAAQMD 1995 requirement.

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Raychem Corporation - Main Site
 # 70002

Table 8
Employee Home Location

	#	%
Brisbane	2	0.2
South San Francisco	2	0.2
Daly City/Colma	2	0.2
San Bruno	3	0.3
Pacifica	1	0.1
Millbrae	5	0.5
Burlingame/Hillsborough	6	0.5
San Mateo	33	3.0
Foster City	21	1.9
Belmont	20	1.8
San Carlos	25	2.3
Redwood City/Woodside	136	12.3
Menlo Park/Atherton/Portola Valley	81	7.3
Half Moon Bay	5	0.5
Other San Mateo Coast	7	0.6
Palo Alto/Stanford	57	5.1
Mountain View	53	4.8
Los Altos	33	3.0
Sunnyvale	48	4.3
Santa Clara	16	1.4
Cupertino	22	2.0
Campbell	4	0.4
San Jose	81	7.3
Gilroy	0	0.0
Other Santa Clara County	22	2.0
Santa Cruz County and south	10	0.9
San Francisco	37	3.3
Marin County and north	3	0.3
El Cerrito to Martinez	0	0.0
Berkeley/Albany/Kensington	1	0.1
Oakland/Emeryville	11	1.0
Alameda	0	0.0
San Leandro	7	0.6
Hayward/Castro Valley	21	1.9
Union City	28	2.5
Fremont	159	14.4
Newark	61	5.5
680 Corridor	30	2.7
East Contra Costa County	6	0.5
Livermore	7	0.6
Tracy/Lodi/Stockton and south	33	3.0
Solano County and east	1	0.1
Out of Area/Unknown	8	0.7
No answer	22	
Total	1130	100.0

Table 9
One-Way Commute Miles

	#	%
0 - 4	97	8.9
5 - 9	220	20.2
10 - 14	300	27.5
15 - 19	171	15.7
20 - 29	140	12.8
30 - 39	90	8.2
40 - 49	20	1.8
50+	53	4.9
Total	1091	100.0

TABLE 10
Work Schedule During the Survey Week

	#	%
Full-time (5 or more days)	1051	93.1
Compressed work week (3/36, 4/40, 9/80)	10	0.9
Part-time, 20 hours or more	30	2.7
Part-time, less than 20 hours	2	0.2
Did not work during the week	14	1.2
Other	22	1.9
Total	1129	100.0

TABLE 11
Type of Fuel Used

	#	%
Gas	1074	98.8
Diesel	9	0.8
Other	4	0.4
Total	1087	100.0

87/-2

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 # 70002

TABLE 12
What Prevents Use of Alternative Commute Mode

	#	%*
Transit service inadequate	439	44.2
Difficult to find ridesharers	157	15.8
Work hours are irregular	656	66.1
Need car for emergencies	300	30.2
Poor bike/pedestrian access	103	10.4
Need car for work	288	29.0
Need car for stops en route	314	31.6
Prefer to drive car	236	23.8
Total Responses	2493	
Total Respondents 993		

* Percentage of respondents (multiple responses allowed)

TABLE 13
Mode Willing to Use at Least One Day a Week

	#	%*
Carpool	471	58.9
Vanpool	242	30.3
Public Transit	225	28.2
Bicycle	187	23.4
Walk	14	1.8
Telecommute	417	52.2
Total Responses	1556	
Total Respondents 799		

* Percentage of respondents (multiple responses allowed)

TABLE 14
Incentives Encouraging Alternative Mode Use

	#	%*
Financial subsidies	274	32.8
Guaranteed ride home	337	40.4
Awards/prizes	38	4.6
Transit ticket sales at work	45	5.4
Transit information assistance	56	6.7
Shuttle from transit to work	196	23.5
Preferred pooler parking	24	2.9
Pool match assistance	180	21.6
Bike lockers/showers at work	83	9.9
Better bike/pedestrian access	134	16.0
Work schedule flexibility	296	35.4
On-site services	89	10.7
Other	136	16.3
Total Responses	1888	
Total Respondents 835		

* Percentage of respondents (multiple responses allowed)

TABLE 15
Factors in Choosing Commute Mode

	#	%*
Travel time	782	69.9
Cost	293	26.2
Convenience/flexibility	978	87.4
Comfort and safety	307	27.4
Less pollution, energy use	123	11.0
Ability to stop en route	310	27.7
Total Responses	2793	
Total Respondents 1119		

* Percentage of respondents (multiple responses allowed)

TABLE 16
Respondent Requested RIDES Information

	#	%
Yes	196	17.3
No	934	82.7
Total	1130	100.0

TABLE 17
Transit Users Drive to Station/Stop?

	#	%
Yes	4	44.4
No	5	55.6
Total	9	100.0

TABLE 18
Poolers Drive to Pickup Point?

	#	%
Yes	49	40.8
No	71	59.2
Total	120	100.0

Raychem Corporation - Main Site
 # 70002

TABLE 19
Employee Home Zip Code Listing

	#	%		#	%
54938	1	0.1	94125 San Francisco	1	0.1
93635	1	0.1	94127 San Francisco	4	0.4
93907 Salinas	1	0.1	94131 San Francisco	1	0.1
94002 Belmont	20	1.8	94133 San Francisco	1	0.1
94005 Brisbane	2	0.2	94301 Palo Alto	20	1.8
94010 Burlingame	6	0.5	94303 Palo Alto	19	1.7
94015 Daly City/Colm	2	0.2	94304 Palo Alto	2	0.2
94018 El Granada	2	0.2	94305 Stanford	3	0.3
94019 Half Moon Bay	5	0.5	94306 Palo Alto	13	1.2
94020 La Honda	3	0.3	94401 San Mateo	4	0.4
94022 Los Altos	16	1.4	94402 San Mateo	15	1.4
94024 Los Altos	17	1.5	94403 San Mateo	14	1.3
94025 Menlo Park	67	6.0	94404 Foster City	21	1.9
94027 Atherton	9	0.8	94502	1	0.1
94028 Portola Valley	5	0.5	94506 Danville	2	0.2
94030 Millbrae	5	0.5	94509 Antioch	2	0.2
94035 Moffett Field	1	0.1	94513 Brentwood	1	0.1
94037 Montara	1	0.1	94514 Byron	2	0.2
94038 Moss Beach	1	0.1	94520 Concord	1	0.1
94040 Mt. View	26	2.3	94523 Pleasant Hill	1	0.1
94041 Mt. View	14	1.3	94526 Danville	1	0.1
94043 Mt. View	13	1.2	94536 Fremont	64	5.8
94044 Pacifica	1	0.1	94538 Fremont	37	3.3
94061 Redwood City	51	4.6	94539 Fremont	25	2.3
94062 Redwood City	35	3.2	94541 Hayward	2	0.2
94063 Redwood City	38	3.4	94542 Hayward	3	0.3
94065 Redwood City	11	1.0	94544 Hayward	10	0.9
94066 San Bruno	3	0.3	94545 Hayward	3	0.3
94067 Redwood City	1	0.1	94546 Castro Valley	1	0.1
94068	1	0.1	94549 Lafayette	1	0.1
94070 San Carlos	25	2.3	94550 Livermore	7	0.6
94080 South S.F.	2	0.2	94552 Castro Valley	2	0.2
94086 Sunnyvale	19	1.7	94555 Fremont	33	3.0
94087 Sunnyvale	25	2.3	94560 Newark	61	5.5
94089 Sunnyvale	4	0.4	94561 Oakley	1	0.1
94103 San Francisco	1	0.1	94566 Pleasanton	12	1.1
94107 San Francisco	1	0.1	94568 Dublin	1	0.1
94109 San Francisco	3	0.3	94570 Moraga	1	0.1
94110 San Francisco	1	0.1	94577 San Leandro	2	0.2
94112 San Francisco	2	0.2	94578 San Leandro	2	0.2
94114 San Francisco	3	0.3	94580 San Lorenzo	3	0.3
94116 San Francisco	3	0.3	94583 San Ramon	6	0.5
94117 San Francisco	4	0.4	94587 Union City	28	2.5
94118 San Francisco	2	0.2	94588 Pleasanton	3	0.3
94121 San Francisco	5	0.5	94598 Walnut Creek	1	0.1
94122 San Francisco	3	0.3	94602 Oakland	4	0.4
94123 San Francisco	2	0.2	94605 Oakland	2	0.2

TABLE 19
Employee Home Zip Code Listing

	#	%
94610 Oakland	1	0.1
94611 Piedmont	2	0.2
94612 Oakland	1	0.1
94618 Oakland	1	0.1
94705 Berkeley	1	0.1
94839	1	0.1
94941 Mill Valley	2	0.2
94960 San Anselmo	1	0.1
95002 Alviso	1	0.1
95005 Ben Lomond	2	0.2
95006 Boulder Creek	2	0.2
95008 Campbell	4	0.4
95014 Cupertino	22	2.0
95030 Los Gatos	2	0.2
95035 Milpitas	12	1.1
95037 Morgan Hill	3	0.3
95050 Santa Clara	6	0.5
95051 Santa Clara	10	0.9
95062 Santa Cruz	1	0.1
95066 Scotts Valley	2	0.2
95070 Saratoga	3	0.3
95073 Soquel	1	0.1
95076 Watsonville	1	0.1
95111 San Jose	3	0.3
95112 San Jose	5	0.5
95116 San Jose	1	0.1
95117 San Jose	1	0.1
95118 San Jose	3	0.3
95119 San Jose	2	0.2
95120 San Jose	3	0.3
95121 San Jose	4	0.4
95123 San Jose	5	0.5
95124 San Jose	7	0.6
95125 San Jose	4	0.4
95127 San Jose	6	0.5
95128 San Jose	4	0.4
95129 San Jose	5	0.5
95130 San Jose	5	0.5
95131 San Jose	3	0.3
95132 San Jose	4	0.4
95133 San Jose	5	0.5
95134 San Jose	2	0.2
95135 San Jose	1	0.1
95136 San Jose	1	0.1
95148 San Jose	7	0.6
95205 Stockton	1	0.1
95206 Stockton	1	0.1
95209 Stockton	1	0.1
95215 Stockton	1	0.1
95254 Wallace	1	0.1
95306 Catheys Valley	1	0.1
95330 Lathrop	2	0.2
95336 Manteca	1	0.1
95337	2	0.2
95350 Modesto	3	0.3
95351 Modesto	1	0.1
95356 Modesto	3	0.3
95358 Modesto	2	0.2
95363 Patterson	5	0.5
95366 Ripon	1	0.1
95367 Riverbank	1	0.1
95368 Salida	1	0.1
95376 Tracy	7	0.6
95604 Auburn	1	0.1
97045	1	0.1
No answer	22	Missing
	1130	100.0

Appendix F

Raychem's Employer-Based Trip Reduction Plan Summery

Trip Reduction Plan		
MAIN SITE		
Element	Points	Cost
Required Marketing	0	$ 4,000.00
Op. Marketing-prmot/B2wk/StA/Dsp	5	$ 4,000.00
Required Ridematching	0	$ -
Optional Ridematching	5	$ 400.00
Guaranteed Ride Home (GRH)	15	$ 2,000.00
Employer-Facilitated Vanpools		
Program Management	4	$ 500.00
Showers and Clothes Lockers	3	$ -
Support for Bicyclists and Walkers		
Route Information	1.5	$ 1,000.00
Bicycle Safety Speaker	0.5	$ 100.00
Bicycle Maintenance Speaker	0.5	$ 100.00
Mileage Club	0.5	$ -
Shuttles to Transit	8	$ 1,500.00
On-Site Services		
Photo Developing Service	1	$ -
Credit Union	1	$ -
Cafeteria / Mobile Catering Service	1	$ -
Workout Facility	1	$ -
Transit Tickets by Mail	3	$ 300.00
Plan Review	-	$ 500.00
Sub-total	50	$ 14,400.00
	Total	**$ 14,400.00**

Appendix G

Raychem's Employer-Based Trip Reduction Plan as Approved by BAAQMD

Employer Trip Reduction Plan

Plan Form A ■ Certification

This form must be included in all Plans.

Employer: Raychem

Work Site Address: 300 Constitution Drive

Menlo Park, CA 94025-1164

Work Site Identification Number: 871-2

Employee Transportation Coordinator: Mark Burriss

ETC Phone Number: 415) 361-2978

Number of Peak Period Employees at the Work Site: 1837

California law (Section 43485, Health & Safety Code) affects large employers who subsidize employee parking that they do not own, and who can reduce the number of parking spaces leased without penalty. These employers must offer employees a cash equivalent to the parking subsidy. Employees who use an alternative mode, can therefore, "cash-out" their parking space. This law is administered by the California Air Resources Board (ARB). For more information, call the ARB at (916) 327-2980.

Does this law apply to this work site? ☐ Yes X No
If yes, on an attachment to this form, describe how you are complying with the law.

By signing below, I hereby certify that the information provided in this Employer Trip Reduction Plan is, to the best of my knowledge, true and correct. I further commit to implementing all measures and Alternative Emission Reduction Program(s) included in the Employer Trip Reduction Plan approved by the Bay Area Air Quality Management District for the work site identified above. The budget and staff resources identified on Plan Form E, Plan Summary and Budget, are a true and accurate representation of the monetary and staff resources that are available and will be committed to implementing this Employer Trip Reduction Plan.

NAME: Robert Saldich
Type or Print

TITLE: CEO
Type or Print

SIGNATURE:

DATE:

The highest ranking official at the work site must sign this form.

Employee Notification Requirements (Section 13-1-402). Describe how employees were notified of Regulation 13, Rule 1, and Program and Plan development, and what information was provided to employees at the three times specified below. Attach copies or descriptions of employee notices or bulletins as appropriate.

At the time of Registration:

Request for participation in Survey (Attachment #1)

During development of the Employer Trip Reduction Program:

In the announcement of survey results (Attachment #2).

Thirty days prior to submittal of this Employer Trip Reduction Plan:

In the announcement of plan formulation (Attachment #3).

Plan Form B ■ Employee Profile

This form must be included in all Plans, except those including AERPs.

Total employees at the work site: 2328_
Total employees that start work during the 6 a.m. to 10 a.m. peak period: 1837_____
Employment profile: Describe the structure of your work force:
12 % Management
11 % Clerical/Support
29 % Production Workers
33 % Professional/Technical
1 % Customer Service
14 % Other: _____

Employee commute distance and home location: Indicate the percentage of peak period employees in each commute distance range:
8.9% 0-5 miles one-way
20.2% 6-10 miles one-way
43.2% 11-20 miles one-way
12.8% 21-30 miles one-way
14.9% 31 or more miles one-way

Identify groups of employees that you will target in your Trip Reduction Plan (i.e., employees that live 31 or more miles from the work site, or production workers).
1. Employees that live more than 20 miles from the work site.
2. Employees that requested rideshare information on the survey form.
3. Employees who work regular hours.
4. Employees who live within 10 miles of the work site.

Describe any relevant characteristics of your employee population that are likely to influence their choice of commute mode.
1. Large hourly workforce with regular schedules.
2. Professional workforce that has irregular hours.

Attitudinal Survey Requirement (Section 13-1-408.1.e). Summarize and discuss the results of the attitudinal questions from the most recent employee transportation survey, or the results of an employer/employee work group. Any work group or special survey should ascertain employee attitudes toward the various commute alternatives and potential incentives and services to promote the use of these alternatives. Explain how employee attitudes and preferences were taken into account in the development of your Plan.
==========

Irregular work hours are what prevent the majority of respondents (66.1%) from using an alternative commute mode. The second highest response is inadequate transit service (44.2%). Our marketing campaign will target those people who work irregular hours by suggesting they use a commute alternative once a week. Transit service is poor and Raychem will solicit the transit agencies for better service.

The number one incentive is having a guaranteed ride home. This was followed closely by work schedule flexibility and financial subsidies. Raychem is implementing a guaranteed ride home program as part of our plan and although we are not going to provide direct financial subsidies, we have work schedule flexibility available to professionals on a case by case basis.

The alternative commute modes our employees are most willing to use a least once a week are carpooling and telecommuting. We currently provide Rides matchlist application to employees and are hoping to go on-line when it is available. Telecommuting is managed the same as flexible schedules.

The number one factor in choosing an alternative commute mode is convenience and flexibility. The number two is travel time. In order to address these issues we are promoting a carpooling program that will allow flexibility and speed up most commutes by using the HOV lanes.

Plan Form C ■ Work Site Analysis

This form must be included in all Plans, except those including AERPs.

A. Basic Characteristics

Describe the nature of the work site. Is it located in an urban, suburban, or rural area? Does the work site stand-alone or is it in a multi-tenant building or complex? Describe any factors relating to the location or lay-out of the work site that inhibit employee use of commute alternatives.
==========

Raychem Corporation of Menlo Park, California, is an international company with approximately 11,000 employees in over 40 countries and revenues of $1.5 billion in fiscal year ending July 1994. The company utilizes its expertise in materials science, product design and process engineering to develop, manufacture and market high-performance products for electronics, industrial and telecommunications applications.

This Raychem site is located along the Bayfront Expressway between Marsh and Willow Roads in Menlo Park. The campus has sixteen buildings and is next the urban neighborhood of East Menlo Park.

Existing factors that inhibit the use of commute alternatives are significant. The primary one is the poor rapid transit service to the site. This is because it is located at the hub of three counties and the transit services do not cross over the site effectively. The second are the bottlenecks along the access routes that make it difficult and dangerous to ride a bicycle to the site. The third is employees fear of waiting for transit after dark due to the site's proximity to the high crime areas of East Menlo Park and East Palo Alto. These are in addition to traditional excuses for not using commute alternatives.

Key freeways and Arterial streets serving the site	HOV lanes available?	Level of Congestion (High, Moderate, Low)
Dumbarton Bridge	Yes	High
Hwy. 101	Yes	High
Marsh Road	No	High
Willow Road	No	High
Bayfront Expressway	No	High

Describe any bottlenecks or persistent chokepoints on main access routes:
Marsh Road overpass.
Willow Road overpass.

B. Parking

	Number
Maximum # of Employees On-Site at One Time	1837
On-Site Parking Spaces Available to Employees	2513
Off-Site Spaces Owned or Leased by Employer	0

Describe nearest available off-site parking, e.g., on-street parking in adjacent neighborhoods, parking lots of neighboring buildings, public lots, vacant land:
This site has extensive off-site parking on public streets.

Are there any restrictions or controls for nearby on-street parking?
No.

Describe parking charges (if any) for on-site or off-site parking:
None.

Describe any subsidy you provide to employees for leased parking spaces:
None.

C. Transit Access

Describe any transit stops or bus shelters on or adjacent to the work site:

DB1 stops 3 blocks from the rear entrance. The walk is approximately 1/2 mile to the nearest building.

Describe all transit service within 1/4 mile of work site:

Transit Provider	Route #	Frequency of Service	Distance from Stop to Work Site	Estimated # of Employees Living near Route
AC Transit	DB	30 min	1/4 mile	140
SamTrans	51B	1 hour	0	135

Shuttles:
List all rail stations (BART, CalTrain, or light rail) or ferry terminals within 3 miles of the work site.
Menlo Park CalTrain.

Do local transit buses connect the station(s) to the work site?
Yes the 51B during the commute hours.

Describe any shuttles that currently link your work site with the rail station(s) or ferry terminal.

CalTrain Shuttle

Do nearby employers provide shuttles?
Yes

D. Bicycle and Pedestrian Access

Percent of employees who live within 1 mile(0-4m) of work site: 8.9 %

Percent of employees who live within 5 miles(5-9) of work site: 20.2 %

Describe the conditions for bicycling or walking to the work site, including terrain, road and traffic conditions, and access to the work site. Describe any hazards or obstacles that impede pedestrian or bicycle access.
High crime areas to the south of the site dissuade many from riding.

The access from Willow and Marsh are very dangerous.

Describe any special bicycle lanes or pedestrian walkways.

There is a bicycle bridge between Willow and Marsh but access is through East Menlo Park and not recommended after dark.

F. Additional Characteristics

Describe any other relevant characteristics of the work site or the surrounding area that may influence employee commute mode decisions:
See Above.

Plan Form D ■ Vehicle Trip Reduction Worksheet

This form must be included in all Plans, except those including AERPs.
See instructions on back.
Part 1 - Trip Reduction Target

A	**0.94** **Current Net VER**	**0.74** **Final VER Target**	**0.20** **VER Gap**
B	**0.20** **VER Gap**	**1837** **# Peak Period Employees**	**367.4** **Daily Vehicle Trip Reduction Target**
C	**367.4** **Daily Vehicle Trip Reduction Target**	**5** **Days per Week**	**1837** **Weekly Vehicle Trip Reduction Target (1837)**

Part 2 - Projected Reduction in Vehicle Trips

	A	x	B	x	C	=	D
Commute Alternative	**Estimated # of New Participants**		**Estimated Avg. Frequency per Week**		**Avg. # of Trips Reduced per Day**		**Vehicle Trips Reduced per Week**
Carpool	850		2		.6		1020
Vanpool	15		5		.9		67.5
Transit	250		3		1.0		750
Bicycle	10		2		1.0		20
Walk	0		0		1.0		0
Telecommute	50		1		1.0		50
CWW 4/40	0		1.0		1.0		0
CWW 9/80	0		0.5		1.0		0
CWW 3/36	0		2.0		1.0		0
TOTAL	1175						1907

Plan Form D ■ Instructions

The purpose of this worksheet is to determine a realistic combination of mode shifts that will achieve the reduction in vehicle trips necessary to reach the final VER objective. Part 1 calculates the required reduction in vehicle trips on a weekly basis. Part 2 provides a means to work backward to allocate the necessary reduction in vehicle trips among the various commute alternatives.

Part 1:

A. Subtract the target VER from the work site's current net VER (as calculated from the most recent employee transportation survey). The target VER is the final VER objective for the zone where the work site is located. 0.94-0.74 = 0.20

B. Multiply the VER Gap by the number of peak period employees at the work site to calculate the daily vehicle trip reduction target. 0.20x1837 = 367.4

C. Multiply the daily trip reduction target by 5 to calculate the weekly vehicle trip reduction target. 367.4x5 = 1837

Part 2:

Once the weekly vehicle trip reduction target is calculated in Part 1, use Part 2 to work backward to determine a combination of mode shifts that will produce the required reduction in vehicle trips. This combination should reflect the trip reduction measures included in the Plan.

Step 1. Column A: For each alternative commute mode, estimate the number of new participants expected to switch from driving alone to the alternative mode. In estimating the number of new participants for each mode, make realistic estimates based upon the a) the current mode split at the work site, and b) the trip reduction measures that will be implemented at your work site as a result of the Plan.

Step 2. Column B: Estimate the average frequency per week that employees will use each commute alternative. This may vary by mode. For example, vanpoolers may ride the vanpool on a full-time basis (5 days per week), whereas bicyclists may ride only 2 or 3 times per week, and telecommuters may telecommute perhaps 1 or 2 days per week.

Step 3. Multiply the figures in the three columns to calculate the vehicle trips reduced per week for each alternative commute mode: A x B x C = D (vehicle trips reduced per week). [Note: Average number of trips reduced per day for carpool is 0.6; this assumes an average of 2.4 occupants per carpool. Average number of trips reduced per day for vanpool is 0.9; this assumes an average of 10 occupants per vanpool.]

Step 4. Tally the figures in Column D (vehicle trips reduced per week). Compare this total to the weekly vehicle trip reduction target from Part 1, Line C. The total estimated reduction in weekly vehicle trips should equal or exceed the weekly vehicle trip reduction target in Part 1.

Plan Form E ■ Plan Summary and Budget

PERIOD COVERED: 5/95 - 7/96__

1. Plan	2. Implementation	3. Development	4. Annual	5. Estimated	6. Points
Marketing / Optional Marketing	7/95	3450	3537	5	
Ridematching	7/95	0	0	0	
Optional ridematching	7/95	0	630	5	
Guaranteed Ride Home	7/95	895	1370	15	
Employer-facilitated vanpool program mgmt.	3/95	48	294	4	
Showers and clothes lockers	Existing	0	0	3	
Support for bicyclists and walkers	5/95	-	-	-	
Route information	5/95	292	0	1.5	
Speaker on bicycle maintenance	9/95	0	0	0.5	
Speaker on bicyle safety	9/95	0	0	0.5	
Mileage Club	6/95	0	0	0.5	
Shuttles to transit	Existing	0	4960	8	
On-site services	-	-	-	-	
Credit Union	Existing	-	-	1	
Cafeteria / Mobile catering service	Existing	-	-	1	
Photo Developing Service	Existing	-	-	1	
Workout facility	Existing	-	-	1	
Transit Tickets by Mail	9/95	172	484	3	
			-		
Totals		$37333	$11275	50pts.	

* This Column for

Plan Form E ■ Instructions

You must use this form to summarize all of the Plan measures that are already implemented, or will be implemented after Plan approval, at the work site. If necessary, use an additional copy of this form to list all the measures.

Column 1: List each measure in your Plan. If there are annual overhead costs that are not applicable to any one Plan measure, enter "Annual Overhead" in the last row of Column 1. If implementing an AERP, indicate the type of AERP (i.e., vehicle buy back, non-work VMT reduction, etc.).

Column 2: List the month and year the measure was, or will be, fully implemented. If implementation of the measure is on-going, such as marketing or ridematching, indicate the start-up date for implementation. For AERPs, indicate the start-up date for implementation, and if necessary, attach a more detailed implementation schedule to the form.

Column 3: Transfer the value of the Development Costs from each Trip Reduction Measure Description form. Total the Development Costs for each measure in the bottom row. For AERPs, indicate any development costs associated with the AERP (see the Instructions section at the beginning of Appendix A for a more detailed discussion of Development Costs).

Column 4: Transfer the value of the Annual Costs from each Trip Reduction Measure Description form. If there are annual overhead costs not applicable to any one measure, enter "Annual Overhead" in Column 1, and the annual overhead costs in Column 4. Total the Annual Costs for each measure and annual overhead, if any, in the bottom row. For measures that you begin implementing "mid-year", enter the estimated on-going implementation costs for a full year of implementation. For AERPs, indicate any annual costs associated with implementation.

Column 5: Estimate the point value for each measure based upon the criteria in Table 1 and on the individual Trip Reduction Measure Description forms. Total the point values in the "Totals" row. If the point value is less than 50 points, you should include additional measures in your Plan or explain in a cover letter accompanying the Plan the specific reasons why each of the measures not included in the Plan are not reasonable, feasible or cost effective for the work site. Do not enter any point values if the Plan includes an AERP.

Column 6: This column is for BAAQMD use only.

Plan Form 1 ■ MARKETING

This form must be included in all Plans.

Part I: Measure Description

Describe how and how often you market the measures in your Plan (at a minimum, marketing must be done quarterly). Include information on the marketing media (newsletters, paycheck stuffers, e-mail, etc.) and the content of marketing material. If you have any special marketing promotions, such as a formal commute alternatives program or a name for your program, you should describe that as well. Also, describe any permanent displays associated with the marketing program, including location.

==========

The Trip Reduction Plan will be marketed through internal distribution of memos and fliers, posters, electronic mail, and portable information kiosks.

Commute alternative information will disseminated throughout the year to coincide with events and regional promotions. The schedule has not been established but information will be issued almost every month. In

addition the ETC will be available at the cafeteria the first Wednesday of every other month to answer questions and provide information.

Permanent displays were not appropriate at this time because of resource constraints but portable kiosks will be purchased that will move to different building lobbies every other month. The kiosks will have transit schedules, route maps, internal and external resources, Rides matchlist applications, and fliers of upcoming events.

List the transit information you have available, including route maps, schedules, brochures, etc. Describe how the information is distributed. For example, if it's a route map, are employees entitled to a free copy, or is there just one copy that hangs on a wall? Are copies available at a permanent display or upon request to the ETC?

Route maps, schedules, and other information will be available from the ETC and the kiosks. Specifically, route maps for CalTrain, CalTrain Shuttle, SamTrans 50B, 50V, Dumbarton Express lines are out for employees to pick up. There are two 6' x 8' displays being created that will have shuttle routes, Santa Clara and San Mateo bus routes and plan measures that will be displayed at break rooms and moved troughout the sites.

The ETC also provides information as requested individually. The ETC's phone number is published in all trip reduction literature and information is either sent through interoffice mail or right over the phone. Transit information will also be available from the ETC computer information program developed by the City of Menlo Park.

Describe how you orient new employees about the trip reduction plan. What materials do new employees receive? How soon after hire does the orientation take place?

New hires are oriented within a week of being hired. A packet with commute information is provided to each new hire. The packet contains a summary of the Raychem Trip Reduction Plan, CalTrain Shuttle schedules, Rides matchlist application

Describe any annual event(s) you have as part of your trip reduction plan.

Raychem has a bike to work day and is investigating doing a commute alternative fair.

Raychem is actively participating in the Spare the Air program.

Part II: Implementation Schedule

List approximate dates of marketing material distribution.
Vanpool information seminar - 3/95
Bike to work day - 4/95
Trip Reduction Plan review - 5/95
GRH - 6/95
Plan roll out announcement / Carpooling - 7/95
Vehicle buy-back - 8/95
Spare the air - 9/95
Survey announcement - 10/95
Survey week 10/31/95 - 11/4/95

Vehicle buy-back - 12/95
Carpooling - 1/96
Vanpool information seminar - 3/96
Bike to work day - 4/96
Trip Reduction Plan review - 5/96
GRH - 6/96
Restart cycle with improvements.

List approximate dates of any annual events (list event with date--month/year).
See above.

Part III: Budget

See the Introduction section of Appendix A for instructions, if necessary.

Development

		Dollars
Staff	50 Hours	= $2400
Capital Costs		$1050
Other Costs		0
Total Development Costs		$3450

Implementation

		Dollars
Staff	40= Hours (annual)	$1920
On-Going Costs (annual)		$1325
Total Annual Implementation Costs		$3245

Plan Form 2 ■ RIDEMATCHING

This form must be included in all Plans.

Part I: Measure Description

The ridematching system used must, at a minimum, provide employees with potential ride matches within the same, and nearby, zip code(s) as the employee's home. The system must be available to all employees at the work site on an on-going basis. Check all applicable ridematching services available to your employees.

X RIDES (basic call-in or matchlist request form service)

X RIDES fax-a-match (service provided by ETC)

X RIDES On-Line (As soon as it is available)

☐ In-house or other ridematching service, including Solano Commuter Information (describe below)

Describe the process employees use to obtain the ridematching services (where do they get forms--if needed; how do they submit them; when do they receive a ridematch list?)

Currently they request them from the ETC and they get one on their annual transportation survey. When the program is implemented they will be also be available from the portable kiosks and from the ETC during the lunch time booth set ups every other month.

To have an effective ridematching system (one that results in employees joining carpools and vanpools), it is necessary to follow-up and further encourage employees that requested ridematching lists to join a carpool or vanpool. Describe how you follow up with employees.

Each employee who submits a ridesharing matchlist will be contacted within a month. The follow-up will consist of contacting the employee by phone to determine if they have had any success in finding a match and if they would like to get information about transit options. Each employee requesting information will be contacted twice by the ETC in addition to service provided by Rides.

Ridesharing Study

Ridesharing is one of the BAAQMD's required trip reduction measures and one that will be implemented at Raychem. The criteria calls for providing a ridematching service to all employees on an ongoing basis and following up with requesters. The type of follow up is not specified and this program will quantify the effectiveness of providing varying levels of follow up.

The method will be to divide requesters into three groups. Provide a different level of follow up and support to each group and measure the results. Each group will be randomly selected from those who requested ridesharing information at the time of the survey.

The first group will get no support except from that provided by Rides. Rides mails out match lists to requesters and follows up with two phone calls.

The second group will be contacted personally and asked to participate in an internal Raychem match list program. The program will consist of creating and maintaining an Excel spreadsheet that will be sorted for each requester. Each requester will be individually contacted twice after the match list has been sent out.

The third group will be invited to a presentation by Rides where the benefits of ridesharing will be presented and the Raychem match list program will be distributed. Tables will be set up with assigned seating so people who live near each other will be sitting together. Each attendee will be individually contacted four times after the meeting.

This ridesharing study will begin in July and be completed over the span of four months.

Part II: Implementation Schedule

Date employees first able to use the ridematching system (if using RIDES request forms, give date employees were first provided request forms).
10/31/94
(Once the ridematching system or service is available to employees, it must then be available on an on-going basis.)

Part III: Budget

See the Introduction section of Appendix A for instructions, if necessary.

Development

		Dollars	
Staff	negligible Hours	= negligible	
Capital Costs		$0	
Other Costs		$0	
$0			
Total Development Costs			

Implementation

		Dollars	
Staff	10 Hours (annual)	= $480	
On-Going Costs (annual)		$150	
Total Annual Implementation Costs		$630	

Plan Form 4 ■ GUARANTEED RIDE HOME

Part I: Measure Description

To receive full points, the guaranteed ride home program must, at a minimum, be offered to all employees who use commute alternatives two days per week or more.

Describe the full range of circumstances which allow a commute alternative user to receive a guaranteed ride home:

A GRH will be provided for the following emergencies: 1) accidents, sudden illnesses, or situations adversely affecting the individual or their immediate family members; 2) catastrophic events (e.g. fires, floods, robberies) causing extensive damage or loss to an individual's home or its contents; 3) vehicle breakdowns (e.g. individual's carpool, vanpool, or bicycle); 4) car/vanpool driver becomes unavailable due to an emergency (such as those listed above under 1 and 2); or 5) theft of bicycle, car, or van.

How many times per year may employees use a guaranteed ride home?

Four

Describe the mode(s) of transportation that employees will use for the guaranteed ride.

Taxi, Rental Car, Transit

Describe the process employees will use to receive the guaranteed ride, including arranging for the ride, costs to the employee (if any), and any subsequent paper work required.

1. Register as a alternative commute user and receive vouchers.

2. Contact appropriate vendor. (Taxi if <20 miles and Enterprise Rent-a-car if >20 miles).

3. Give voucher to vendor and use to attend to emergency.

Describe any limitations, stipulations or other conditions associated with your guaranteed ride home program.

Invalid reasons to use this service include: personal errands, planned appointments, business-related travel, working late, and job related injuries (this is a Worker's Compensation issue). This list is by no means complete!
The service is provided for emergencies only and trips should go directly to homes, hospitals, or similar emergency destinations. Non-emergency side trips, such as running errands, are not allowed.

Part II: Implementation Schedule

Date all eligible employees first able to use the guaranteed ride home service:

September 1995

Part III: Budget

See the Introduction section of Appendix A for instructions, if necessary.

Development

		Dollars
Staff	15 Hours	= $720
Capital Costs		$175
Other Costs		0
Total Development Costs		$895

Implementation

		Dollars
Staff	15 Hours (annual)	= $720
On-Going Costs (annual)		$650
Total Annual Implementation Costs		**$1370**

Plan Form 5 ■ TRANSIT TICKET SALES

Part I: Measure Description

List the transit tickets you sell at the work site or that are available through a "Ticket by Mail" program. Describe the full range of tickets offered, such as single day passes, weekly passes, monthly passes, etc. *To receive the maximum points, you must offer for sale tickets for the majority of transit providers that service the work site and vicinity.*

Transit tickets will be available by mail to all Raychem employees starting September 4, 1995. Types of tickets available will include CalTrain and SamTrans services.

Describe the process employees go through to purchase the tickets. How frequently are the tickets on sale (i.e., two days per month)? If a subsidy is provided, this should be reflected on Plan Form 6, Incentives. If using a "Ticket by Mail" program, describe how you promote this service to employees.

Employees will order tickets through the mail. Fliers will advertise the program quarterly.

Part II: Implementation Schedule

Date transit tickets available at the work site for employees or "Ticket by Mail" program started: 9/4/95

Part III: Budget

See the Introduction section of Appendix A for instructions, if necessary.

Development

		Dollars
Staff	1.5 Hours	= $72
Capital Costs		$0
Other Costs		$100
Total Development Costs		**$172**

Implementation

		Dollars
Staff	8 Hours (annual)	= $384
On-Going Costs (annual)		$100
Total Annual Implementation Costs		**$484**

Plan Form 9 ■ EMPLOYER-FACILITATED VANPOOLS

Part I: Measure Description

List the number of vanpools that currently serve the work site: 1

List the estimated number of new vanpools resulting from this measure: 2

Based on Plan Form D, Vehicle Trip Reduction Worksheet, list the number of new peak period employees from your work site that will vanpool: 15

Describe employee home location areas that you will target for vanpool formation.

Tracy, Stockton, Modesto

Describe the vanpool ownership structure (e.g., employer-owned or leased, owner-operated, third-party lease).

Third-party leases

Describe the rider recruitment, meeting organization, and any other services that you provide to help establish and maintain vanpools.

Raychem hosted a Vanpool seminar with presentations from:

- Jeff Becerra - RIDES
- Ed Scofield - San Juaquin Transit Authority
- Raul Garcia - Stanslaus Transit Authority
- Elizabeth Jespersen - VPSI
- Tom Gretzer - Capital Ford

Information was provided on setting up a vanpool and opportunities for setting up a vanpool were made available.

List the per employee monthly value of any subsidy or financial incentive provided (an incentive need not be a direct cash payment): $0

(If you offer an incentive under Measure 6.1 or 6.2, you are not eligible to receive points for offering any type of financial incentive for vanpoolers.)

Describe the type of subsidy or financial incentive offered and indicate how the per employee monthly value of the subsidy or financial incentive is determined. A subsidy can include provision of a vehicle or insurance, vehicle maintenance, etc.

N/A

Part II: Implementation Schedule

Date recruitment assistance and vanpool organization available to employees: 3/95

Date employees eligible to receive vanpool subsidy or financial incentive: ____N/A_

Part III: Budget

See the Introduction section of Appendix A for instructions, if necessary.

Development

		Dollars	
Staff	1 Hours	=	$48
Capital Costs			0
Other Costs			
Total Development Costs			$48

Implementation

		Dollars	
Staff	3 Hours (annual)	=	$144
On-Going Costs (annual)			$150
Total Annual Implementation Costs			**$294**

Plan Form 11 ■ TELECOMMUTING

Part I: Measure Description

Indicate the number of peak period employees currently telecommuting: ____10

Indicate the estimated number of peak period employees that will begin to telecommute as a result of this measure (from Plan Form D, Vehicle Trip Reduction Worksheet): ___50

Explain how you developed this estimate.

Based on the number of peak period employees who are not required to be here to do their job (71% or 1350) it was decided that about 4% (50 employees) could utilize a telecommute schedule if permitted.

Of the total existing and estimated new telecommuters, how many will telecommute:

1 day/week: 60 2 days/week: _____ 3 or more days/week: _____

Attach a copy of your official telecommuting policy. If no policy exists yet, describe in general terms what will be included in the policy. Include information on which employees are eligible to telecommute and the process for employees to request and begin telecommuting.

The telecommuting policy will include:

a. Policy statement regarding business needs, terms and conditions of employment, equipment provision, work space designation, the telecommuting agreement, tax implications, dependent care, and scheduling.
b. Eligibility of telecommuters such as job characteristics, and supervisory obligations to manage based on performance.
c. Safety of working at home including ergonomic elements.

Is training for new telecommuters and their supervisors available? If so, describe.

No. An awareness / eligibility document will be issued by Site Management.

Describe any necessary equipment an employee that chooses to telecommute needs at home. If equipment is necessary, indicate whether the employer supplies the equipment, or if the employee must provide the equipment. Also, indicate whether the employer or the employee is responsible for incidental expenses, such as phone charges, while telecommuting.

Equipment needs will be determined on an idividual basis. Most situations will require the employee to have computer equipment and a phone at home.

Part II: Implementation Schedule

Date employees eligible to begin telecommuting: _____
If you do not have an official telecommuting policy, list date policy will be completed and distributed to employees:
_____

Part III: Budget

See the Introduction section of Appendix A for instructions, if necessary.

Development

			Dollars	
Staff	_____ Hours	=		
Capital Costs				
Other Costs				
Total Development Costs				

Implementation

		Dollars
Staff	_____ Hours (annual) =	
On-Going Costs (annual)		

Total Annual Implementation Costs

Plan Form 13 ■ SHOWERS AND CLOTHES LOCKERS

Part I: Measure Description

List the total number of clothes lockers provided: 600

List the total number of showers or shower areas provided (describe if necessary):
15 Male 15 Female

Describe the location of showers and clothes lockers in relation to the work site and common areas.

Almost every building has a shower area with lockers. This is because of the manufacturing employees clothes changing needs in addition to exercising and commuter needs.

Are there separate shower and clothes locker facilities for men and women? If not, explain how both sexes can be accommodated.

Yes.

Failure to accommodate both sexes will result in fewer than the maximum points being awarded.

If showers and/or clothes lockers are not available at the work site, describe any arrangements made with nearby gyms or health clubs for use of shower and clothes locker facilities. List any fees to employees associated with using this service and describe the location of the gym or health club relative to the work site.

N/A

If there is a fee for use of the facilities, a maximum of one point will be awarded.

Part II: Implementation Schedule

Date employees able to use clothes locker facilities: Existing

Date employees able to use shower facilities: Existing

Part III: Budget

See the Introduction section of Appendix A for instructions, if necessary.

Development

		Dollars
Staff	0 Hours	= 0
Capital Costs		0
Other Costs		0
Total Development Costs		0

Implementation

		Dollars
Staff	0 Hours (annual)	= 0
		0
On-Going Costs (annual)		0
Total Annual Implementation Costs		0

Plan Form 14 ■ SUPPORT FOR BICYCLISTS AND WALKERS

Part I: Measure Description

Describe or attach to this form the information that is provided to employees describing bicycle routes, lanes, paths and safe walking routes to the work site.

See attached.

Check the support services you provide to bicyclists and/or pedestrians:

- ☐ Tools and air pumps on-site
- X Bicycle maintenance and repair instruction
- ☐ Buddy or mentor program
- X Annual bike to work day, week or month
- ☐ Provision of meeting area or newsletter for bicycling or walking club
- X Other: Speaker on bicycle safety
- X Mileage club

or each item checked above, provide a description of the service. For example, explain how your "buddy" or mentor program works. Where relevant, provide dates, frequencies and other pertinent information.

Raychem coordinates with State Bike-to-work day. It takes place in May.

The speakers on bicycle safety and repair / maintenance will occur this fall.

Mileage club provides incentives to employees who walk or ride bicycles by how far they go in a year. Prizes include such things as subscriptions to magazines, shoes, and t-shirts

Part II: Implementation Schedule

Date information on bicycle and/or pedestrian routes available at work site for employees: 4/95

List the support services and date each service available to employees:

Bike to work map 4/95.

Bicyclist Club with guest speakers on safety, maintenance, and purchases to be organized this summer.

Part III: Budget

See the Introduction section of Appendix A for instructions, if necessary.

Development

		Dollars
Staff	4 Hours	= $192
Capital Costs		$100
Other Costs		0
Total Development Costs		**$292**

Implementation

		Dollars
Staff	4 Hours (annual)	= $192
On-Going Costs (annual)		100
Total Annual Implementation Costs		**$292**

Plan Form 15 ■ SHUTTLES TO TRANSIT

Part I: Measure Description

Indicate if the shuttle described herein represents:

X Existing service

☐ Expansion of existing service

☐ New service

Estimate the average daily number of peak period employees at your work site that use, or will use, the shuttle: Current 25

Future 100

Describe the shuttle service. Provide a route map of the shuttle and a schedule of operation of the shuttle. List all pick-up and drop-off points (i.e., Tamien Light Rail Station, Company X work site, and Company Y work site).

Industrial shuttle service provides shuttles and the City Menlo Park is the managing representative. There are many companies who utilize the shuttle but the primary one in addition to Raychem are Sun Microsystems and Failure Analysis.

Maps are attached for the two shuttle routes, Willow Road and Marsh Road.

Do any local transit buses connect the work site to the same areas as the shuttle? If yes, describe the location of the pick-up and drop off points relative to the work site, and the frequency of the bus service.

Shuttles that duplicate transit service may receive reduced, or no, points.

No.

Is there a charge to employees to use the shuttle? If yes, what is the daily round trip charge? No

To receive the maximum points, employees cannot be charged for using the shuttle.

Describe the role of other employers and/or public agencies involved in the shuttle service operation.

The City of Menlo Park manages the shuttle service and participating employers pay an annual fee.

Part II: Implementation Schedule

Date employees able to use the shuttle service: Existing

Part III: Budget

See the Introduction section of Appendix A for instructions, if necessary.

Development

		Dollars
Staff	N/A Hours	= 0
Capital Costs		0
Other Costs		0
Total Development Costs		0

Implementation

		Dollars
Staff	20 Hours (annual)	= $960
On-Going Costs (annual)		$4000
Total Annual Implementation Costs		$4960

Plan Form 17 ■ ON-SITE SERVICES

Part I: Measure Description

Indicate the on-site or nearby services that are or will be provided for your employees. For on-site services, indicate whether the service is existing or planned (if planned, list date service available to employees); for services within 1/4 mile of the work site, denote that the service exists and give address where the service is located.

	On-Site		Within 1/4 mile	
Service	Existing	Planned (Date)	Existing	Address
On-site Cafeteria	X			
Take-out or dine-in restaurant/deli				
Child care facilities				
Bank	X			
ATM machine				
Postal services (personal mail)				
Dry cleaner				
Video rental				
Photo developing	X			
Convenience market				
Grocery Store				
Other:				
Workout facility	X			

For on-site services such as photo development or postal service, explain how an employee uses the services (e.g., the employee drops off the film at a central location). For 'pick-up and delivery' service, indicate the frequency and location of the pick-ups and deliveries.

Employees can develop film at multiple locations around the site. The film is dropped off and picked up.

Part II: Implementation Schedule

In the column titled 'Planned (Date)' in the table in Part I, list the date the service is available to employees. For services within 1/4 mile walking distance, only services available at the time of Plan submittal are eligible to receive points.

Part III: Budget

See the Introduction section of Appendix A for instructions, if necessary.

Development

	Dollars	
Staff	=	$0
Hours		
Capital Costs		0
Other Costs		0
Total Development Costs		0

Implementation

	Dollars	
Staff	=	$0
Hours (annual)		
On-Going Costs (annual)		0
Total Annual Implementation Costs		$0

Plan Form 18 ■ SITE MODIFICATIONS

Part I: Measure Description

Describe the site modification. If necessary, provide a map of the work site and indicate the location of the modification.

The access to the site will be improved for pedestrians from the Chilco St. entrance. The sidewalk will be connected from inside the facility to the outside (see map). The maps shows the Raychem Distribution Center on the upper left and the main entrance guard shack in the center.

Explain how the site modification encourages the use of commute alternatives at the work site. Provide any supporting material, such as survey results or employee comments/complaints.

Employees have complained about pedestrian access for many reasons including being able to walk to the site safely. Many employees use this entrance for jogging at lunch as well.

If the site modification is not yet completed, list any approvals that you need to secure (e.g., city, building owner, etc.). Have these approvals been secured?

City permits are required and are expected by the end of May. Project is scheduled to be competed by the end of July.

If a public agency is undertaking a site modification at or near your work site, describe how your actions facilitated the site modification.

N/A

Part II: Implementation Schedule

Date of completion of the site modification: July 31, 1995
If necessary, include a schedule estimating completion dates for major milestones in the site modification process, such as landlord or city approval of modification.

See above.

Part III: Budget

See the Introduction section of Appendix A for instructions, if necessary.

Development

	Dollars
Staff 1 hours	$48
Capital Costs	$30,000
Other Costs	$0
Total Development Costs	$30,048

Implementation

	Dollars
Staff 0= hours (annual)	$0
On-Going Costs (annual)	$0
Total Annual Implementation Costs	$0

Appendix H

Raychem's Guaranteed Ride Home Program

Raychem

Guaranteed Ride Home Program

Employee Rules and Regulations

Welcome to Raychem's Guaranteed Ride Home (GRH) program. This program is designed as an incentive for commuters to use alternative transportation by providing emergency transportation when commuters leave their car home. Raychem has established a voucher system for taxis and rental cars to provide guaranteed return trips for commuters who use alternative transportation to get to and from work.

The following will explain the voucher system. PLEASE READ THESE INSTRUCTIONS CAREFULLY AND SIGN.

DEFINITIONS:

A. "Alternative transportation" is defined as bicycle, bus, carpool, drop-off, and walking. BART and CalTrain may also be defined as "alternative" if the commute between the workplace and the BART or CalTrain station is not in a single-occupant vehicle (That is, if the commuter does not drive alone to the workplace **after** riding CalTrain or BART).

B. "Carpool" is a motor vehicle occupied by two or more persons traveling together where at least two of the persons are being transported for commute purposes (i.e. one parent transporting a child to be dropped off at school does not constitute a carpool for the purposes of this program).

C. "Commute" is a regular and routine trip to and from home to the workplace for the beginning and end of a scheduled workday.

D. "Drop-off" is an employee who has been delivered to the workplace by a vehicle which continues on a commute to another workplace. Dropping off children/students at a daycare/school or being dropped off by a driver who is not continuing on a commute to work does not qualify.

E. "Emergency" is any of the following situations: 1) accidents, sudden illnesses, or situations adversely affecting the individual or their immediate family members; 2) catastrophic events (e.g. fires, floods, robberies) causing extensive damage or loss to an individual's home or its contents; 3) vehicle breakdowns (e.g. individual's carpool, vanpool, or bicycle); 4) car/vanpool driver becomes unavailable due to an emergency (such as those listed above under 1 and 2); or 5) theft of bicycle, car, or van.

F. "Guaranteed Ride Home (GRH)" is a trip, or series of trips (e.g. from work to a hospital, and then home), made by an individual enrolled in the GRH program during an emergency, as defined above, to home, hospital, or similar emergency destination. One GRH is considered any one trip, or series of trips, made during a 24-hour period.

G. "Single-occupant Vehicle" is a motorized vehicle, such as a passenger car, truck, or motorcycle occupied by one commuter.

H. "Workplace" is the permanent place of employment or predominant location of an employee during work hours.

ELIGIBILITY

A. The individual must use alternative transportation the day of the emergency.

B. The individual must be registered as a GRH participant.

C. Use of the rental car vendor requires a minimum age of 21 and a valid, non-restricted California Drivers License.

CONDITIONS

A. A GRH will be provided for the following emergencies: 1) accidents, sudden illnesses, or situations adversely affecting the individual or their immediate family members; 2) catastrophic events (e.g. fires, floods, robberies) causing extensive damage or loss to an individual's home or its contents; 3) vehicle breakdowns (e.g. individual's carpool, vanpool, or bicycle); 4) car/vanpool driver becomes unavailable due to an emergency (such as those listed above under 1 and 2); or 5) theft of bicycle, car, or van.

Invalid reasons to use this service include: personal errands, planned appointments, business-related travel, working late, and job related injuries. This list is by no means complete.

The service is provided for emergencies only and trips should go directly to homes, hospitals, or similar emergency destinations. Non-emergency side trips, such as running errands, are not allowed.

B. The individual must have used an alternative mode of transportation that day which is no longer available to him/her.

C. By using the GRH voucher the employee is certifying that they need an emergency ride home. All voucher uses will be investigated. Any misuse will result in the collection of remaining vouchers the employee has and termination of the employees eligibility to participate in the program

D. Fitness to drive and a valid drivers license are necessary for an individual to utilize the rental car aspect of the GRH program. Rental Cars are available for one 24 hour period only. All costs above this 24 hour rental (additional usage, gasoline. etc.) are the sole responsibility of the employee.

E. An individual may use this service a maximum of four (4) times in a calendar year, no more than twice in one calendar month.

F. The program may be canceled at any time at the sole discretion of Raychem.

HOW TO USE THE GRH PROGRAM

In the event of an emergency, the employee should:

A. Notify their supervisor of the emergency and that they are leaving work.

B. Contact either a GRH taxi or rental car vendor, and follow the instructions on the back of the voucher explicitly.

C. Upon returning to work, complete the necessary follow up survey with the GRH Supervisor (failure to do so will result in the employee assuming all costs of his/her GRH).

In the event that an individual elects to use transportation other than a taxi or rental car, or a combination of taxi and mass transit for his/her GRH, Raychem will provide reimbursement for the mass transit portion of the trip. Individuals should submit a reimbursement form to the Site ETC with all relevant trip information. The form for reimbursement will require signatures by the individual and the Site ETC, as well as the reason for trip usage, length of trip, and copies of dated receipts.

I have read and understand the above rules and regulations.

_____ _____

Participants Signature Date

Sign and return to Mark Burriss, Site Employee Transportation Coordinator, M/S 506/8601.

Raychem

Guaranteed Ride Home
Registration Form

Your Name _____ Employee number _____
Department number _____ Division _____
Home Address _____ Work Address _____
_____ _____
Home Phone _____ Work Phone _____

The following questions are asked in order to compare travel patterns before and after participation in the Raychem Guaranteed Ride Home Program. This information will be used to monitor and improve the program.

1. What is your estimated distance between work and home? _____(in miles)
_____(in minutes)

2. What are your typical work hours when using a commute alternative? _____

3. What commute alternative do you currently use to get to work?
(Check the mode that you use the most frequently)

_____Drive Alone
_____Carpool/Vanpool
_____Bicycle
_____Bus
_____CalTrain (w/ shuttle)
_____CalTrain (drive alone to workplace)
_____Walk
_____Other (Specify: _____)

4. How did you hear about this program? _____
_____

I understand the guidelines of the Guaranteed Ride Home (GRH) program. I hereby release Raychem from any liability, claims, and demands arising out of my participation in the GRH program, including but not limited to personal injury; loss, theft, or damage to my personal property; loss of income; consequential damages resulting from delays or absence of a cab/rental car, or termination of the program.

_____ _____
Participants Signature Date

Return this completed form to Mark Burriss, Site Employee Transportation Coordinator, M/S 506/8601.

_____ _____
Mark Burriss, Site ETC Date

SJSU SAN JOSE STATE UNIVERSITY

A campus of The California State University

Office of the Academic Vice President • *Associate Academic Vice President* • *Graduate Studies and Research*
One Washington Square • San José, California 95192-0025 • 408/924-2480

TO: Mark J. Burriss
707 Continental Cir., #1538
Mountain View, CA 94040

FROM: Serena W. Stanford Serena W. Stanford
AAVP, Graduate Studies & Research

DATE: December 12, 1994

The Human Subjects-Institutional Review Board has approved your request to use humans subjects in the study entitled:

"Employee Transportation Survey"

This approval is contingent upon the subjects participating in your research project being approriately protected from risk. This includes the protection of the anonymity of the subjects' identity when they participate in your research project, and with regard to any and all data that may be collected from the subjects. The Board's approval includes continued monitoring of your research by the Board to assure that the subjects are being adequately and properly protected from such risks. If at any time a subject becomes injured or complains of injury, you must notify Dr. Serena Stanford immediately. Injury includes but is not limited to bodily harm, psychological trauma and release of potentially damaging personal information.

Please also be advised that each subject needs to be fully informed and aware that their paritic pation in your research project is voluntary, and that he or she may withdraw from the project at any time. Further, a subject's participation, refusal to participate, or withdrawal, will not affect any services the subject is receiving or will receive at the institution in which the research is being conducted.

If you have any questions, please contact me at (408) 924-2480.