

Effects of Variable Work Hour Programs on Ridesharing and Organizational Effectiveness: A Case Study, Ventura County

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Commuter Transportation Services, Inc., conducted a 6-month pilot project to determine the impact of variable work hour schedules on ridesharing and organizational effectiveness in Ventura County. The results of the study revealed a significant relationship between ridesharing and the implementation of the variable work hour programs. At the 6-month juncture, ridesharing rates had increased from 8 to 113 percent and the cost of driving alone had decreased from 82 to 77 percent. Chi-square results indicated a significant decrease in commute time for participants. When considering the results of the variable work hour program on the individual and the organization, the results of the study reveal positive relationships between participation and self-reported increases in productivity, job satisfaction, satisfaction with schedule, morale, and ability to facilitate child care. Supervisor responses indicated similar, positive changes with respect to productivity and job satisfaction. Chi-square analysis revealed that participants on the 4/40 schedule had the largest increases in productivity, job satisfaction, and satisfaction with schedule; participants on the flex-time schedule reported more convenience facilitating child care. The results of this study have positive implications for the use of variable work hour schedules, which can be an effective strategy for increasing ridesharing and for improving organizational effectiveness.

As policymakers, business leaders, and the public become more committed to nontraditional approaches to reducing or shifting vehicle trips, increasing attention has focused on the use of variable work hour (VWH) programs as an effective transportation demand management (TDM) strategy. In Southern California, numerous ordinances advocate that employers consider VWH programs as one strategy to affect commute trips and subsequently, air quality. In Ventura County, as part of its effort to meet the requirements of the Air Pollution Control District's proposed Rule 210, its trip reduction rule, a VWH pilot program was initiated.

The VWH schedules being considered by the county were flex-time and the compressed work weeks: the 9/80 and the 4/40. The central feature of these programs is that they depart from a rigidly fixed, 5-day work week. The basic model of flex-time consists of five interrelated components: (a) a bandwidth, or total number of operating hours in a given work day; (b) a core time, or designated period of time during which all employees are required to be at work; (c) a flexible band of hours both before and after the core time that allows

employees to vary their arrival and departing times; (d) banking of hours, which allows employees to carry-over surplus or deficient hours worked; and (e) variability of schedule allowing the employee the freedom to vary working hours from one period to another without prior approval from a supervisor.

A compressed work week schedule permits employees to finish their usual number of working hours in fewer days per week or per pay period. On the 4/40 compressed work week, employees work their usual number of weekly hours in 4 days. The fifth day is off. On the 9/80 schedule, employees work their usual number of hours in a 2-week period in 9 days. The 10th day is off.

Although VWH programs are gaining acceptance as a TDM strategy, the effect of these programs on ridesharing, the individual, and the organization is not fully understood. A review of the ridesharing literature suggests that the impact of flex-time on a variety of ridesharing factors can vary depending on a variety of site-specific characteristics including location, size, and accessibility (1). In their 1980 study, for instance, Ott et al. (2) found an increase in ridesharing and a decrease in driving alone after the implementation of a flex-time schedule. Another study (3) found increases in drive alone rates after the implementation of a flex-time schedule.

Similarly, studies focusing on the impact of VWH schedules on employee performance have produced differing results depending on implementation characteristics and criterion measures. Some authors, e.g., Hartman and Weaver (4), have reported increased productivity for employees on a compressed work week. Calvasina and Boxx (5) found no significant changes when a group of workers moved from a regular work week to a compressed work week. Similar results are found in the flex-time research (6).

As the demographics of the workforce change, so do the priorities of the workforce. These demographic changes make the implementation of VWH schedules even more complex. Today, there is a greater push for a balance between work and family life (7). In some cases, VWH schedules can be an alternative that allows for more time with the children; in others it can be an alternative that alleviates the difficulty of managing child care arrangements. Additional research is needed to determine which schedule is most beneficial.

Surprisingly, little research has been done to assess the impact of different levels of flexibility of VWH schedules on

ridesharing, employee performance, organizational effectiveness, and workforce priorities. The results of a 6-month pilot program assessing the impact of three VWH schedules are reported. The purpose of the pilot program was to determine the effect of the three different VWH schedules on ride-sharing, traffic congestion, and organizational effectiveness. It is anticipated that the results of the study will serve to identify the most optimal VWH schedule.

METHODOLOGY

In October 1988, Commuter Transportation Services Inc. (CTS) conducted a survey for the County of Ventura Transportation Management Task Force. The survey was designed to determine which types of VWH schedules management would consider and which departments would be most suitable for the study. On the basis of the results of this survey, three pilot departments or agencies were selected.

As a program policy, employees on flex-time are allowed to determine their arrival and departure time within the band width offered to them by their supervisor. Employees are expected to be present during core time and supervisors may or may not permit employees to vary their schedules on a day-to-day basis. Employees on the 9/80 schedule are only allowed to change their off days twice per year. Employees on the 4/40 schedule are allowed to change their off days, usually Monday or Friday, with a supervisor's consent.

The 6-month monitoring report was distributed during the last week of April 1990 by county staff to all participants. Each department was responsible for the collection and distribution of the survey. A total of 376 surveys were distributed and returned. The survey was analyzed by CTS.

Survey Design

The stated purpose of the VWH program is to reduce traffic congestion and decrease vehicle trips. However, implementation will also impact the organization, the supervisor, and the employee in a number of ways. Therefore, the survey was designed to measure the effect of the VWH program on the following:

- Traffic congestion,
- Ridesharing,
- Organization operations,
- The employee,
- Child care arrangements, and
- The supervisor.

In addition, the pretest analysis survey conducted by the County of Ventura Transportation Management Task Force revealed several issues of concern, as indicated by survey respondents. These issues of concern, listed in priority order, were as follows:

- Difficulty scheduling meetings,
- Difficulty locating people,
- Decreased productivity,

- Decreased customer service, and
- Increased absenteeism.

All survey responses were self-reported.

Participant Demographics

Of the 376 employees participating in the study, 161 (43 percent) are women and 212 (57 percent) are men. There are 11 females and 22 males on the 4/40 schedule; 85 females and 86 males on the 9/80 schedule; 25 females and 50 males on flex-time; and 35 females and 40 males not in the VWH program. Before the end of the pilot, 5 females and 5 males discontinued the VWH program.

Of the 376 employees who participated in the program, 172 employees (47 percent) currently are on a 9/80 schedule, 76 employees (21 percent) are on a flex-time schedule, and 33 (9 percent) are on a 4/40 schedule, 76 (20 percent) do not participate, and 10 (3 percent) have discontinued. The employees who discontinued the program were treated as missing data.

Reasons for discontinuing the VWH program were described as follows: one respondent reported schedule conflicts with child care; three respondents reported health problems; three indicated their supervisor preferred that they work a regular schedule; and two respondents indicated fatigue.

Reasons for not starting the VWH program were described as follows: 2 respondents reported schedule conflicts with school; 9 respondents indicated schedule conflicts with child care; 39 indicated their supervisor preferred that they work a regular schedule; 10 respondents said they work a shift schedule; 3 respondents indicated fatigue; 5 respondents indicated the VWH program conflicted with carpool arrangements; and 10 respondents indicated they had other reasons for not participating.

IMPACT OF VWH ON COMMUTE

In order to investigate the impact of VWH schedules on ride-sharing, participants were asked if they had changed their mode of travel after the implementation of the VWH program. A chi-square analysis was used to test the relationship between the VWH schedules and ridesharing. The results indicate a significant relationship between the implementation of the VWH program and increases in ridesharing chi-square = 412.22 (df = 4, $N = 376$), $p < .000$. Driving alone decreased from 82 to 77 percent, and ridesharing increased from 8 to 13 percent (see Table 1).

These findings agree with the rideshare research conducted by Ott et al. (2).

Although there is a relationship between the implementation of the VWH program and ability to rideshare, results of this study indicate no significant relationship between the flexibility of a particular VWH program and ability to rideshare chi-square = 0.50370 (df = 4, $N = 278$), $p > .05$. Although an unexpected result, this finding suggests that ability to rideshare is enhanced regardless of the type of VWH schedule implemented. These results may serve to alleviate

TABLE 1 RIDESHARING BEFORE VERSUS AFTER THE IMPLEMENTATION OF VWH

Before VWH	After VWH, Percent			Total
	Drive Alone	Ride-share	Other	
Drive alone	74.7	5.6	1.9	82.2
Rideshare	1.3	6.6	0.0	8.0
Other	0.5	0.5	8.8	9.8
Total	76.6	12.8	10.6	100.0

concerns among some employers that too much flexibility in schedule will obstruct the employee's ability to rideshare.

In addition to increases in ridesharing rates, participants reported significant decreases in commute time compared to those on a traditional schedule (the amount of time was not asked; the question determined only whether an increase, decrease, or no change occurred). Chi-square results indicate significant differences in commute time for those on the VWH program compared to those not on the program chi-square = 78.3 (df = 2, $N = 331$), $p < .0000$. For individuals on the VWH program, 171 (64 percent) indicated a decrease in commute time; 92 (35 percent) indicated no change in commute time; and 2 (1 percent) indicated an increase in commute time. Conversely, only 3 (5 percent) of the individuals not on the VWH program indicated decreases in commute time; 63 (95 percent) indicated no change and no respondent indicated an increase in commute time (see Table 2).

These findings may be the result of participants on the VWH schedule adjusting their commute time to avoid peak-congestion periods, reductions in commute trips, and increases in ridesharing that enable individuals to make use of carpool lanes. Additional research is needed to determine which, if any, of these factors influence decreases in reported commute time.

In summary, the results of this study indicate that VWH schedules do increase overall ridesharing rates. There was no significant relationship found between type of VWH schedule and effect on ability to rideshare. Taken together, these findings suggest that ridesharing will increase regardless of which type of schedule is implemented. They also suggest that commute time will decrease significantly for participants on VWH schedules. The following pages report and discuss the results of the relationship between implementation of the VWH pilot program and the work unit.

WORK UNIT OPERATIONS

Difficulty scheduling meetings and locating people were reported in pretest analysis as issues of most concern. Of the 371 participants, 64 (17 percent) said that ability to schedule meetings has worsened; 245 (66 percent) said that it had stayed

the same, 25 (7 percent) said it improved, and 37 (11 percent) did not know. Results indicate that those not on a VWH schedule have more difficulty scheduling meetings with those on the program. The results also indicate that ability to locate people has worsened between participants and nonparticipants. That is, the employees who did not participate on a VWH schedule have difficulty locating the employees who did participate. Other work unit issues addressed in the survey included customer relations, coverage of daily tasks, and phone coverage. On a 1 to 4 scale (1 = improved, 2 = stayed the same, 3 = worsened, and 4 = didn't know), the mean for all questions was 2.0. These findings suggest that VWH schedules do not negatively impact these work unit operations. However, scheduling meetings and ability to locate people have become more difficult between those not on VWH schedules and those on VWH schedules.

EMPLOYEE PERFORMANCE

The results of the present study indicate a positive relationship between participation on VWH schedules and increases in productivity. Individuals on VWH schedules reported a significantly greater increase in productivity ($M = 1.50$) than did those not on VWH schedules ($M = 2.03$). The analysis of variance (ANOVA) results indicate a significant difference between the change in productivity between participants and nonparticipants $F(1; 331) = 61.121$, $p < .000$.

In addition to increases in productivity for individuals on VWH schedule, ANOVA tests indicate a significant positive relationship between satisfaction with schedule for individuals on VWH schedules ($M = 1.42$) compared with those who are not ($M = 2.48$). ANOVA $F(1; 352) = 106.472$, $p < .000$. Participants on VWH schedules report greater increases in job satisfaction and morale. In fact, 232 (83 percent) report increases in morale; 36 (12 percent) stayed the same and 1 (1 percent) report worsened morale. Correlation analysis revealed a significant positive relationship between work schedule satisfaction and overall job satisfaction $r(352) = 0.39$, $p < .001$.

In many ways, the most unique results of the study are the significant relationships found between flexibility of schedule and productivity, work schedule satisfaction, and job satisfactions. For instance, chi-square results indicate a significant relationship between flexibility of VWH schedule and productivity chi-square = 20.96353 (df = 4, $N = 268$), $p < .0003$. Of the participants on the flex-time schedule, 30 percent indicated improved productivity, whereas 70 percent indicated their productivity level had stayed the same. Participants on the 4/40 schedule indicated the highest level of overall productivity. Sixty-seven percent indicated improved productivity; 30 percent indicated no change in productivity; and 3 percent indicated their productivity had worsened. Finally, 57 percent of participants on the 9/80 schedule indicated increases in productivity; 42 indicated productivity stayed the same; and 1 percent indicated their productivity had worsened (see Table 3).

Similar to productivity, chi-square results indicate a significant relationship between flexibility of VWH schedule and satisfaction with current schedule chi-square = 16.56501 (df = 4, $N = 269$), $p < .0023$. Of the participants on the flex-

TABLE 2 COMMUTE TIME CHANGES

In VWH?	Commute Time, Percent			Total
	Increase	No Change	Decrease	
Yes	0.8	34.7	64.5	100.0
No	0.0	95.5	4.5	100.0

TABLE 3 WORK SCHEDULE FLEXIBILITY VERSUS LEVEL OF PRODUCTIVITY

Schedule	Productivity Level, Percent			Total
	Improved	Same	Worsened	
Flex-time	29.9	70.1	0.0	100.0
4/40	66.7	30.3	3.0	100.0
9/80	57.1	41.7	1.2	100.0

time schedule, 54 percent indicated improved satisfaction with schedule; 41 percent indicated their satisfaction had stayed the same; and 6 percent indicated their satisfaction had worsened. Participants on the 4/40 schedule indicated the highest level of satisfaction: 88 percent indicated improved satisfaction with schedule; 12 percent indicated no change; and none indicated their satisfaction with schedule had worsened. Last, 74 percent of participants on the 9/80 schedule indicated increased satisfaction with schedule; 24 percent indicated satisfaction stayed the same; and 2 percent indicated their satisfaction with their schedule had worsened (see Table 4).

Furthermore, results indicate a significant relationship between flexibility of VWH schedule and job satisfaction chi-square = 52.25312 (df = 4, $N = 273$), $p < .0000$. Of the participants on the flex-time schedule, 45 percent indicated improved job satisfaction; 55 percent indicated their job satisfaction had stayed the same; and none indicated job satisfaction had worsened. Participants on the 4/40 schedule indicated the highest job satisfaction: 97 percent indicated improved job satisfaction; 3 percent indicated their job satisfaction had stayed the same; and none indicated their job satisfaction had worsened. Eighty-four percent of participants on the 9/80 schedule indicated increases in job satisfaction; 15 percent indicated job satisfaction had stayed the same; and less than 1 percent indicated their job satisfaction had worsened (see Table 5).

The pilot test reviewed the impact of a variety of other work-related factors following the implementation of the VWH program. Quality and quantity of work, ability to work with fewer interruptions, ability to concentrate on work tasks, and ability to complete work on time were investigated. The majority of respondents reported that these areas stayed the same or improved.

IMPACT OF VWH PROGRAM ON EMPLOYEES WITH CHILDREN

In order to assess the impacts of VWH schedules, respondents were asked how participation in the VWH program affected their child care arrangement. Of the 376 who participated in

TABLE 4 FLEXIBILITY OF SCHEDULE VERSUS WORK SCHEDULE SATISFACTION

Schedule	Level of Satisfaction with Schedule, Percent			Total
	Satisfied	Neither	Dissatisfied	
Flex-time	53.6	40.6	5.8	100.0
4/40	87.9	12.1	0.0	100.0
9/80	74.3	24.0	1.8	100.1 ^a

^aFailure to add to 100.0 percent is due to round-off error.

TABLE 5 FLEXIBILITY OF SCHEDULE VERSUS JOB SATISFACTION

Schedule	Level of Job Satisfaction, Percent			Total
	Improved	Same	Worsened	
Flex-time	45.1	54.9	0.0	100.0
4/40	97.0	3.0	0.0	100.0
9/80	84.0	15.4	0.6	100.0

this study, 137 (20 percent) of employees on a VWH schedule have children and 36 (21 percent) employees do not. As Table 6 indicates, the VWH program had a positive impact on child care arrangements.

Although it is not possible to draw many conclusions on the basis of such a small number of individuals, these results suggest that Ventura County's VWH program does not negatively impact employees with children. On the basis of work force projections, there will be more women with children in the work force, a positive result.

Chi-square analysis indicated a significant relationship between type of VWH schedule and ability to facilitate child care chi-square = 10.87463 (df = 4, $N = 128$), $p < .0280$. Forty-three percent of participants on the flex-time schedule indicated increased ability to facilitate child care arrangements; 57 percent indicated no change; and none indicated that ability to facilitate child care had worsened. Of the participants on the 4/40 schedule, 17 percent indicated increased ability to facilitate child care arrangements; 83 indicated no change; and none indicated worsened ability. Last, 19 percent of participants on the 9/80 schedule indicated increased ability to facilitate child care; 74 percent indicated no change; and 7 percent indicated worsened ability to facilitate child care (see Table 7).

SUPERVISOR PERSPECTIVES

The supervisor survey was administered to all employees who manage staff on the VWH program. A total of 77 supervisors have employees who participated in the VWH program and 10 do not. When a supervisor had more than one employee in the program, they were asked to generalize their responses to describe the attitudes and performance trends of their group as a whole. Supervisors were asked if a variety of factors had changed in their department as a result of the variable work hour program. The results of the study indicate advantages and disadvantages from a supervisor's perspective.

As previously mentioned, the respondents participating in the VWH program reported an increase in productivity. Su-

TABLE 6 EFFECT OF VWH PROGRAM ON CHILD CARE

EFFECT OF VWH PROGRAM ON CHILD CARE	COUNT		PERCENT	
	IN VWH PROGRAM	NOT IN PROGRAM	IN VWH PROGRAM	NOT IN PROGRAM
More convenient	31	0	24%	0%
Less convenient	6	1	5	3
No change	91	34	71	97
No Response	153	41	--	--
TOTAL	281	76	100%	100%

TABLE 7 FLEXIBILITY OF SCHEDULE VERSUS ABILITY TO FACILITATE CHILD CARE

Schedule	Level of Child Arrangement Convenience, Percent			Total
	Increase	Same	Decrease	
Flex-time	43.3	56.7	0.0	100.0
4/40	16.7	83.3	0.0	100.0
9/80	18.8	73.8	7.5	100.1 ^a

^aFailure to add to 100.0 percent is due to round-off error.

pervisors report similar increases: 23 (30 percent) reported an increase in the productivity of their employees and 54 (70 percent) reported that it stayed the same. Increases in the quality of work were also reported. This finding is important because some authors (e.g., 8) claim that supervisors are less likely to regard flex-time as effective. This increase in productivity may be, in part, caused by the increase in job satisfaction noted earlier.

The results of the survey indicate that supervisors perceive a large increase in employee job satisfaction as a result of their participation in the VWH program. Sixty (80 percent) of all supervisors noted an increase in employee job satisfaction and 17 (20 percent) noted no change. The 80 percent of supervisors that indicated an increase in job satisfaction for employees who participated in the VWH program also reported the statistically significant increases in job satisfaction noted earlier. The increases in job satisfaction have led to decreases in absenteeism. As previously stated, one of the major concerns before the implementation of the VWH program was that it would increase absenteeism. Results of the pilot program indicate that the rate of absenteeism has improved as a result of employee participation in the VWH program. That is, 28 (36 percent) supervisors noted a decrease in absenteeism; 45 (59 percent) indicated absenteeism stayed the same; and 4 (5 percent) didn't know.

Although fatigue, coverage of daily tasks, and ability to locate employees are often reported as disadvantages for organizations after implementation of VWH programs, the results of this study indicate more positive results. Sixty-two of the supervisors (82 percent) reported that they were able to cover all daily tasks; 11 (14 percent) said they were not. The remaining 4 percent did not respond. Only 2 (3 percent) of the supervisors reported an improved ability to locate employees; 65 (84 percent) stated it had stayed the same; and 10 (13 percent) said it had worsened. Sixty-three (82 percent) of the supervisors felt that fatigue was not a problem, 5 (6 percent) felt that it was. There were 9 (12 percent) supervisors who did not know.

IMPACT ON SUPERVISORS

The pretest indicated that some supervisors were concerned about a loss of employee control or coordination. This concern was addressed by asking managers if they had to make changes in their management style as a result of their employees' involvement in the VWH program. Of the 76 supervisors participating in the VWH program, 15 (20 percent) indicated that they made changes in management style and 61 (80 percent) indicated that they did not. Of the 10 supervisors who

do not supervise employees on the VWH program, 6 said they did not have to make changes in their style and 4 did not respond.

A chi-square analysis was used to test the relationship between flexibility of VWH schedules and supervisor's perceived need to make changes in management style. The results indicate no significant relationship between the flexibility of VWH schedules and perceived need to make changes in style $\chi^2 = 3.297$ ($df = 2$, $N = 59$), $p > .05$. This interesting yet unexpected result warrants further investigation.

Finally, supervisors were asked to indicate how satisfied they were with the VWH program. Seventy-two (94 percent) of the supervisors would like the VWH program to continue past the pilot; 4 supervisors (5 percent) did not want the program continued and 1 supervisor did not know.

SUMMARY AND CONCLUSIONS

The VWH program is an effective strategy for decreasing vehicle trips at minimal cost while enhancing organizational and employee effectiveness. The results of this study indicate that VWH programs have positive effects on ridesharing, commute time, employee and supervisor job satisfaction, as well as organizational effectiveness.

Overall ridesharing rates increased significantly after the implementation of the VWH program and the flexibility of VWH schedule did not obstruct the ability to rideshare. In addition to increases in ridesharing, individuals on VWH schedule reported significant decreases in commute time.

The impact of VWH schedules on the work unit was also positive. For instance, most respondents indicated that their ability to schedule meetings was not hindered by the implementation of VWH schedules. The majority of respondents indicated no change in ability to locate people; the reported difficulty in locating people and scheduling meetings was concentrated both in participants and nonparticipants. Participants in the VWH program reported experiencing significant increases in their productivity, morale, and job satisfaction, as well as more satisfaction with their schedule when compared to nonparticipants. The majority of employees would like to continue to participate, or begin to participate, in the VWH program.

Overall, the VWH program had a positive impact on child care arrangements. This finding has both important and positive implications for the recruitment and retention of employees with children. The flexibility of the VWH program affects the ease and convenience of child care arrangements. Yet another benefit of the program is a decrease in absenteeism. Supervisors indicate that VWH participation has decreased absenteeism, while job satisfaction and productivity have increased. The majority of supervisors indicate that they did not make changes in their management style. This finding was evident regardless of the flexibility of the VWH schedule. The majority of supervisors are satisfied with the VWH program and would like it to continue.

Three methodological limitations of this study should be considered. First, all participants knew that they were participating in a VWH pilot program and that the results of the pilot might influence policy decisions or county-wide implementation. The policy of Ventura County was to keep em-

employees and supervisors informed. Therefore, the possibility of the Hawthorne effect (i.e., increases in production due to researchers' attention to the workers) or Rosenthal effect (the transmittal of the experimenter's expectations to his or her subjects) should be considered when interpreting the results. The Hawthorne effect should be minimal because the results were maintained over a 6-month period. Moreover, the employees and supervisors were not aware of the type of criteria used to measure the program. Because the criterion measures were compiled by CTS, the expectations on the experimental group were minimal.

Second, participation in the program was voluntary and Ventura County determined the range of flexibility allowed. Therefore, neither randomization nor manipulation of the independent variable was possible. Problems with internal validity, most significantly selection, are plausible (9).

Third, all survey responses were self-reported. There were no hard measures of productivity, job satisfaction, or changes in management style. The study may have been affected by response bias because, for instance, it did not include concealed questions about productivity increases. The criterion measure for permanent implementation was not disclosed to the respondents and the responses were anonymous and confidential. More important, the differences noted in all chi-square measures would not be influenced by response biases because the VWH programs were being measured against themselves.

Although there are some limitations to this research, the results do suggest that VWH schedules are an effective strategy for increasing ridesharing and decreasing commute time. The results of this study have also revealed several benefits such as increasing organizational effectiveness and employee satisfaction. On the basis of the results, the following recommendations were presented to Ventura County.

RECOMMENDATIONS

- Implement variable work hours county-wide. In doing so, emphasize the fact that the purpose of the VWH program is to decrease vehicle trips. Also, offer incentives to those who choose not to drive alone. For instance, allow employees who participate in ridesharing, take transit, walk, jog, bike, or telecommute, priority choice in scheduling off-days or flex-time bandwidths.

- Appoint a VWH internal project director. Because there is a large overlap between implementation of the VWH program and the ridesharing program, consideration should be given to assigning these projects to the same department. The project director should be involved in all phases of implementation and work closely with each department to determine the type of VWH schedule most beneficial on a department-by-department basis. Furthermore, the project

director should work closely with the labor union in all phases of implementation.

- Maintain similar off days and core periods within and between departments. Make use of core time and core days for scheduling meetings. Holding these departments constant within and between departments will facilitate the logistics of arranging meeting times. It will also make it more convenient to locate people, for participants and nonparticipants, within and between departments.

Notwithstanding the fact that the aforementioned recommendations are based on the results of the Ventura County pilot study, they have applicability to other employers considering the adoption of a VWH program. It is hoped that they will enhance the overall efficiency and effectiveness of the VWH program implementation process.

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