

TRAFFIC CONGESTION AND THE WORK WEEK

BY JOHN SEMMENS

WHAT SHOULD WE DO ABOUT "RUSH HOUR?" — THOSE PERIODS WHEN EMPLOYEES are commuting to and from jobs, often in the midst of incredible traffic congestion. Some changes in employment practices would eliminate the worst of that. I'll list four measures that might prove helpful, and what government might do in connection with each.

A compressed work week. The "normal" work schedule for the last two generations in the United States has consisted of five eight hour days per week. This requires ten commute trips beginning Monday morning. Typically, these trips occur at the same time for every member of a large portion of the work force. Shifting the work schedule to four days a week, ten hours each, would reduce the weekly work commutes by 20%.

The prospect of a regular three day weekend often makes this revised work schedule quite popular among employees. Still, not all jobs are amenable to this sort of schedule. Small businesses, or those with back-to-back shifts around the clock, may not be able to use it. A 24 hour day breaks down conveniently into three portions of 8 hours each, after all. Nevertheless, the four-day work schedule has not been adopted everywhere that it conceivably could. We can expect that as it spreads, a beneficial impact will result.

Second, flex time. This works as an extension of the idea just expounded. It modifies the normal work week by shifting the hours of work, so that (although there will likely always be peak periods on the roads) the peaks can be lowered. This would help reduce some of the capacity overload that aggravates the traffic congestion problem. The magnitude of impact on traffic congestion from the increased use of flex time, unfortunately, is bound to be small. Again, not every job can accommodate flexible scheduling. For work sites, however, that HAVE used flex

time, trips during congested periods have shown declines of from 3% to 10%. I recommend a report by Michael Meyer et al. *A Toolbox for Alleviating Traffic Congestion* (Institute of Transportation Engineers 1989). On a regional basis, a greater use of flex time might reduce traffic congestion by 0.3%

Third, proximate commuting. This is an idea developed by Gene and Carolyn Mullins. The overwhelming majority of commuters make their trips in single-occupant vehicles, despite massive and ongoing efforts to induce them to do otherwise. We have spent billions on expanding bus systems and creating rail lines. We have spent millions to create high-occupancy vehicle lanes. We have expended considerable effort trying to persuade people to carpool or ride transit. We have even witnessed the outbreak of punitive mandates for "trip reductions" inflicted on employers. Still the overwhelming majority of commuters insist on driving their own cars to work.

Why? Because the freedom and mobility offered by the privately owned and operated car is a highly valued privilege. And its valuation is not likely to be lowered by any government policy tolerable in a democratic society. Rather than bewail this situation or berate those who choose to drive alone, maybe we should try to adapt to the expressed preferences of the commuting population. This is the strategy adopted by the proximate commuting concept.

Instead of trying to get commuters to give up their cars, proximate commuting seeks to shorten their work trips, by moving the place of employment closer to the employee's home. While not a viable strategy for many types of business, proximate commuting would appear highly suitable for businesses with multiple work sites, such as banks, restaurant chains, retail outlets, public schools, and some government offices. Consider for example

the offices of your state's Motor Vehicle Division for the issuance of drivers' licenses and vehicle registrations. To the extent possible, workers for such businesses can be assigned to the work site closest to their homes, reducing the commute time, and reducing peak period traffic volume.

The Key Bank of Washington conducted a test of the proximate commuting concept in the Seattle metropolitan region in 1995. During the 15 month duration of the demonstration project, nearly 500 employees at 30 branches of this bank were given the opportunity to participate, and about one in six elected to do so. On average, those participating reduced their work commute trip distance by 65%. Because the employees with the longest trips were the most likely to choose to participate, the average reduction in commute miles per branch was 17%. If this idea catches on generally, the potential impact on urban traffic might be substantial. Another attractive feature of the idea is that it doesn't require large public outlays. Employees of multiple-site businesses are encouraged to participate by the opportunity to save time and money on their daily work commute trips. Employers are encouraged to participate as a means of extending a money-saving benefit to employees that does not require that they put out any cash. Proximate commuting, then, is an example of a win-win solution.

Government could take a leading role in pursuing this option. First, it could serve as an example to the rest of the employers of an area by itself initiating proximate commuting policies for police officers, fire fighters, librarians, and recreation leaders. At the county level, this opportunity could be provided to health workers, court employees, law officers, and social workers. At the state level, welfare workers, unemployment officers, motor vehicle officials, and corrections employees could come under its purview.

Further, government could actively

encourage private sector employers to implement such plans. Rather than using the heavy hand of threats and sanctions to intimidate employers into meeting trip reduction mandates, government could offer the helping hand – sharing information and the results of its own experiences.

This would not have a large impact either on air pollution or on traffic congestion, but proximate commuting would be a cost effective method of making a small improvement in both. It would do much more in this line than any projected expansion of the mass transit system, and it would require no tax increase. Even better, it would be able to achieve these results without sacrificing something Americans prize – the freedom and mobility that is attained in driving one's own vehicle.

The final one of the four ongoing work-habit changes of which we need to take account in this survey, telecommuting, reverses the basic work process. It moves the work to the workers rather than moving the workers to their work. Instead of getting in a car or on a bus so his or her body can be taken to a distant place of business, the telecommuting employee sends the results of his/her labors to an employer, by any of several means – oral transmission by telephone, facsimile transmission, also over the phone lines, or e-mail transmission over the internet, or some combination of the three. The contrast in time and energy needed to transport a person as opposed to transporting the work is quite dramatic. The average work commute by car in the Phoenix region is about twelve miles. Moving a 150 lb person twelve miles in a one-ton automobile twice a day will consume about 50 minutes of time. It will cost a little over \$10., that is, 44 cents/mile. But moving this person's work via telecommuting would take a few minutes by FAX and a few seconds via the internet. Since the transmission of data to a

workplace twelve miles away would be a local call, the cost for the use of the phone lines can be reckoned in pennies.

Obviously, telecommuting cannot work for all types of work. It is largely restricted to work that involves the production of information. These jobs involve, for example, research or data analysis, the end product of which is a written document (a report, a memo, a financial statement.) The types of jobs most amenable to telecommuting are the typical "white-collar" jobs – those of accountants, secretaries, statisticians, data processors, or engineers. Jobs requiring the physical presence of the employee, such as manufacturing assembling, waiting on tables, barbering, are not suitable candidates.

Still, the potential reduction of traffic congestion and air pollution from a more widespread resort to telecommuting seems promising. A pilot project in California indicated that telecommuting workers reduce their peak period trips by 60%, their total vehicle miles driven by 80%, and their freeway use by 40%. The program also inspired many of the participants to seek out shopping, recreation, and other non-work related activities at locations closer to their homes, even on non-workdays. See Katherine Turnbull, et al., *Potential of Telecommuting for Travel Demand Management* (Texas Transportation Institute, November 1995). A demonstration project in the Seattle metropolitan region found that telecommuters reduced vehicle miles of travel by 66% and the number of workday trips by 32%.

Telecommuting, though, does not depend upon the public spiritedness of the participants, their desire to do their part to reduce traffic congestion. They are saving themselves the time they would otherwise expend traveling to work. This is the equivalent of an increase in the hourly rate of pay. They also save operating costs and/or

transit fares. They may also get various non-economic benefits such as getting to spend more time with their families, setting their own work hours, and not having to "suit up" to go to the office. Their employers simultaneously save by the reduction in the required office space. An analysis by American Express estimated the annual savings in office expense for each telecommuting "full-time equivalent" employee to be \$15,000 per year. In addition, employers seem to get improved productivity out of the telecommuting workers – the benefits of the new circumstance motivate better performance. Pacific Bell estimated a net productivity gain of 20%.

What might government do to encourage this trend? First, it could serve as an example by initiating telecommuting programs among its employees. Second, it could actively solicit private sector employers to implement telecommuting plans. Right now "corporate culture" is ranked as one of the major barriers to the spread of telecommuting. Government officials could seek to change this culture by generating favorable publicity for those businesses which have helped to reduce the urban problems of traffic congestion and air pollution by implementing more widespread telecommuting options for their employees.

While by itself it will not make a large dent in traffic congestion or air pollution, telecommuting is a cost-effective means for effecting a small improvement on both of those fronts. Even a modestly successful telecommuting program would be able to achieve an impact twice as great as that projected by the expansion of the mass transit system. Unlike the expansion of such a system, the promotion of telecommuting will not require any tax increase. 