

However, local officials must allow full participation by business interests and not let the attitude of "we are above any special interests" keep out or alienate the private sector.

Conventional-Transit Versus Special-Transit Conflict

Since the early 1900s, the tradition has been to provide a single form of public transit on a monopoly- or controlled-franchise basis that minimized or eliminated competition. Various federal legislative actions have furthered this tradition. While the acceptance of paratransit, the brokerage concept, and related schemes has grown of late, there are still numerous roadblocks to the expansion of such schemes. This is particularly true if such plans are, to some extent, pushed before an emergency hits to both ensure readiness and aid overall conservation. Numerous studies have shown how transit and paratransit modes often compete directly with each other rather than draw jointly on the pool of drive-alone commuters.

CONCLUSION

The material presented here was not intended to address all of the relevant issues associated with energy contingency problems and constraints faced by various levels of government. Rather, I have merely tried to identify and discuss a number of key issues that I feel have not been covered sufficiently and need to be. This conference provides a useful forum for the discussion of these topics, although it is clear that they cannot be fully resolved at this time. The experiences with plans to reduce vehicular emissions showed how a public drive to attain a specific goal (improved air quality) can get hung up at the point where the business-as-usual pattern of doing things has to change if any real impacts are to be expected. Many of the long-standing concepts of transportation in this country (e.g., low energy taxation and elimination of transit's

competitors) that bought us into the 1970s are now being challenged, and some may have to change or at least become much more flexible. This will not be an easy task, because programs that produce a net benefit will still have winners and losers. It is to be hoped that the exchange of ideas at conferences like this and occasional shocks like the mid-1979 energy crisis will help prompt useful change and will do more than just get us through shortages every five years.

REFERENCES

1. J. Darmstadter, J. Dunkerley, and J. Alterman. *How Industrial Societies Use Energy: A Comparative Analysis*. Johns Hopkins Univ. Press, Baltimore, 1977.
2. *Energy Conservation in the International Energy Agency: 1976 Review*. Organization for Economic Cooperation and Development, Paris, 1976.
3. K. Erickson. *The Political Economy of Energy Consumption in Industrial Societies*. In *International Energy Policy* (M. Heisler and R. Lawrence, eds.), Lexington Books, Lexington, MA, 1980, pp. 113-143.
4. W. McShane, A. Block, and W. Ihlo. *The Energy Advantages of Public Transportation*. Research and Education Division, Urban Mass Transportation Administration, Draft Rept., March 1980.
5. *Listing of Major State and Regional/Local Plans, Energy and National Resources Program*. National Governors' Association, Washington, DC, March 1979.
6. D. Hartgen and others. *Guidelines for Transportation Energy Contingency Planning*. Presented at FHWA-UMTA Energy Contingency Planning Conference, Albany, NY, May 1979.
7. W. Crowell and A. Block. *The Impact of Transportation Control Plans on the Economy of the Manhattan CBD: Vol. 1, Business Community Survey*. Tri-State Regional Planning Commission, New York, March 1978.

Government Agencies and Fuel Shortages: Past Actions, Current Problems, and Future Opportunities

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The fuel shortage of 1979, like the shortage of 1974, caught the nation unprepared. Government agencies, political leaders, private businesses, and consumers were generally unprepared to cope with a sudden drop in fuel availability and a sharp rise in fuel prices. Among the major consequences of this lack of preparedness were (a) public anger, confusion, and frustration over queues at service stations and the apparent inability of government to solve the problem; (b) severe overloading of all forms of public transportation services in many localities; and (c) substantial damage to important sectors of the U.S. economy (e.g., travel and tourist industries).

Some of these negative impacts probably could have been avoided if government agencies and the private sector had sought to implement well-constructed transportation contingency plans when the shortage struck. Unfortunately, few organizations possessed these plans in the spring of 1979.

Lacking comprehensive contingency plans, what did major institutional actors do in response to the 1979 fuel shortage? In addition, and perhaps more important, what reforms would help the nation prepare for and respond to future fuel shortages? This paper attempts to provide some answers to both these questions, albeit from a general and primarily qualitative point of view. The paper focuses on mass transportation services (i.e., transit, paratransit, and ridesharing services) and automobile travel.

IMPACTS OF THE SHORTAGE

Other papers prepared for this conference describe in detail the impacts of the 1979 fuel shortage on passenger travel and the national economy. For this reason, only a few observations are necessary here prior to discussing the ways in which major institutions responded to the shortage.

Most analysts believe that, in comparison to unconstrained demand, there was a national retail gasoline shortage of between 5 and 10 percent during the late spring and summer of 1979 (1). This shortage first became visible in May and peaked in late June and July. Because of a variety of factors, including government policies and petroleum-producer actions, this shortage was not felt evenly throughout the country. Indeed, some areas of the country had little or no difficulty with their fuel supplies during the shortage period; however, the northeastern region of the United States and several states scattered across the country experienced shortages that may have approached 20 percent.

Some statistics help to define the national impacts of the 1979 shortage. Table 1 shows the percentage change in the use of various modes that occurred in 1979 over such use during the same months of 1978. (Data for Table 1 and Table 2, which follows, were obtained through informal communication with representatives of these modes and

Table 1. Percentage change in vehicle miles of travel in 1979, by mode, when compared to same period in 1978.

Month	Highway ^a	Public Transit ^b	Amtrak	Intercity Bus Travel
January	+4.2	+4.76	+8.8	
February	+3.3	+3.53	+4.6	
March	+2.9	+6.44	0.0	+7.2 ^c
April	+1.9	+1.72	+16.9	
May	-2.0	+7.30	+17.2	
June	-4.8	+10.44	+24.5	+13.1 ^c
July	-6.3	+10.76	+27.6	
August	-3.6	+8.40	+21.4	+12.3 ^d

^a Includes primary and local rural roads, as well as urban roads.

^b Includes bus and rail.

^c Quarterly figures.

^d Incomplete third-quarter figure.

Table 2. Percentage change in 1979 sales of vehicles for personal transportation when compared to same period in 1978.

Month	U.S. Passenger Cars	Imported Cars	Domestic and Imported Bicycles	Motorcycles	Recreational Vehicles
January	+17.8	+2.1	-1.1	-5.5	+5.7
February	+7.9	+11.3	+1.9	-6.7	-11.3
March	-1.1	+27.9	+2.7	+9.2	-26.2
April	-10.6	+24.4	-4.1	+4.6	-33.7
May	-15.8	+30.3	-2.0	+13.8	-44.0
June	-25.1	+8.4	+11.5	+12.8	-57.7
July	-8.9	+17.4	+20.8	+13.0	-56.8
August	-6.8	+2.2	+33.0	+13.5	-54.0

selected materials.) Changes in commercial air travel are not reported here because, in addition to the shortage, the industry was strongly affected by deregulation, fare reductions (e.g., discount coupons), and the United Airlines' strike during the late spring and summer of 1979. However, according to the National Business Aircraft Association, business aircraft travel hardly changed at all during the shortage. As shown in Table 2, sales of various transportation vehicles also were strongly affected by the 1979 shortage.

Vehicle sales were not the only sector of the economy to be strongly affected by the shortage. Travel and tourist industries and recreation areas also lost business as a result of the gasoline shortage. The National Park Service, for example, reported these percentage changes in the number of person days at the country's national parks: December 1978–February 1979, +7 percent; March–May 1979, -2 percent; and June–August 1979, -13 percent.

Hotel occupancy rates also dropped in many areas, with roadside establishments experiencing the most significant declines. The occupancy rate of one of the largest hotel chains, for example, dropped by 6 percent in May, 4 percent in June, and 11 percent in July. Other major chains, however, reported that the shortage had little or no effect on their overall occupancy rates because continued high use of airport, downtown, and destination hotels compensated for declines in patronage in more remote areas (1).

Obviously, these national figures obscure the impact of the shortage on particular states. It should also be noted that factors other than the shortage probably affected many of these statistics. Initial research, however, does suggest that these indicators moved in similar directions in all states that experienced a shortage of gasoline. Surprisingly, many states that experienced little or no shortage did note changes in travel volumes and economic activity comparable to those in states severely affected by the shortage. If this finding is confirmed by more in-depth research, it may have significant implications for policymakers at both the state and national levels.

INSTITUTIONAL RESPONSES TO THE SHORTAGE

Federal Government Response

The primary federal responses came from the President, Congress, and DOE. Many of these responses, however, focused on long-term solutions to the nation's transportation energy problems rather than on short-term actions to eliminate or minimize the impacts of the shortage. Because this paper is most concerned with the latter class of actions as they apply to mass transportation services and automobile travel, only those measures are described below.

Between January 1 and September 1, 1979, DOE took a variety of actions to fine tune its allocation program and provide fuel to essential activities such as mass transportation services. DOE revived its set-aside program for middle-distillate fuels, thereby allowing states to control and distribute up to 4 percent of their total middle-distillate supply to users who could demonstrate hardship or special circumstances. The agency also strengthened its gasoline set-aside program by increasing the amount of gasoline that a state could direct to particular users from 3 to 5 percent. Both of these actions enabled states to provide fuel from their set-asides to transit systems, intercity bus companies, school bus and taxi operators, and other providers of mass transportation who could not obtain fuel from their normal suppliers.

To ensure that mass transportation services had access to fuel, DOE issued Special Rule 9, which permits mass transportation services to receive all the diesel fuel they require for their operations. DOE also revised its classifications of priority users of gasoline and placed mass transportation services in the priority-user category. This classification entitled gasoline-powered mass transportation vehicles to 100 percent of the fuel that they used during a DOE-defined base period. Some time after the shortage, DOE added vanpools to the list of priority users of gasoline under the allocation program.

Some analysts contend that DOE's allocation program caused as many problems as it solved during the shortage. They cite the natural rigidity of the program and the uneven distribution of the shortage across the nation. They also note the inability of the allocation program to respond to geographic shifts in fuel demand over time.

Despite these criticisms, it seems clear that the allocation program did help to resolve the fuel supply problems of mass transportation services during the shortage. The program also allowed states to use their set-asides of gasoline and diesel fuel in flexible and timely ways to provide fuel to essential activities or users who were experiencing particular hardship as a result of the shortage.

In March 1979, two months before the shortage first manifested itself in the retail gasoline sector, President Carter submitted three national contingency plans and a gasoline-rationing plan to Congress. In addition to the rationing plan, one of the three contingency plans—mandatory weekend closings of service stations—focused on the transportation sector. (The weekend-closing proposal is an interesting example of the confusion that resulted from the fuel shortage. DOE proposed mandatory weekend closing of service stations as a national contingency plan. Once the shortage struck, however, station operators began closing voluntarily on weekends to conserve their fuel supplies. Ultimately, state action was needed to force at least some service stations to stay open on weekends for the purpose of maintaining tourism and other important elements of local economies.) Debate on these plans lasted for several months. Ultimately, both plans were rejected by Congress.

Just prior to the shortage, 18 state governors did not possess authority to implement certain measures designed to minimize queues at service stations. Such measures include (a) regulation of the operating hours of service stations, (b) institution of odd-even license plate plans for gasoline purchases, and (c) regulation of the amount of gasoline

purchases through minimum-purchase requirements (in dollars, gallons, or half-tank requirements). On May 29, 1979, the President issued Executive Order 12140, which gave all governors the authority to impose these types of measures. As described here, many states took advantage of the executive order and did implement gasoline control programs.

Throughout the shortage, DOE attempted to balance production of gasoline for summer driving with production of heating oil for the winter. This balancing effort led to several shifts in DOE policy. Just prior to the shortage, DOE ordered refiners to give heating-oil production the highest priority. After the shortage struck California, DOE ordered refiners to step up their gasoline production. In July, DOE again gave the highest priority to the production of heating oil.

DOE, the President, and Congress were not the only federal participants in efforts to manage the fuel shortage's impacts in the transportation sector. Several shortage-related actions were also taken by DOT and the Interstate Commerce Commission (ICC). During June and July, DOT issued a series of notices that

1. Permitted transit authorities to keep their old buses when they ordered new ones, thus reversing an older policy and encouraging the creation of reserve fleets at the local level for use during emergencies (2);
2. Allowed transit authorities to use federal funds to rehabilitate old buses rather than purchase new ones—a regulation that was adopted because of a backlog in bus orders, uncertainties about new bus designs, and a need to increase the number of buses on the road (3);
3. Encouraged transit authorities to construct and operate fuel storage facilities with federal funds—a policy intended to reduce the fuel supply problems of transit authorities by freeing them from daily concerns about fuel availability; and
4. Urged metropolitan planning organizations (MPOs) to undertake contingency planning as part of their regular work programs.

These initiatives, however, had only limited effects during the shortage because of the long lead times required for implementation.

For its part, the ICC issued an emergency declaration that permitted interstate bus carriers to introduce service on routes operated by their competitors, provided these carriers met certain ICC-defined criteria. This declaration took effect in early July and expired in mid-September. Several carriers, notably the Greyhound Corporation, took advantage of this declaration and did operate new services during the July-September period. Few data exist, however, on the relative value of these new services.

State Government Response

When the fuel shortage struck, a majority of the states could claim that they had contingency plans to deal with fuel supply disruptions in the transportation sector. In fact, most of the contingency plans prepared prior to the shortage were little more than shopping lists of measures that a governor or state legislature might use in the event of a shortage. Equally important, state-developed transportation contingency plans generally emphasized voluntary rather than mandatory programs. Finally, few of the plans included specific implementation procedures or estimates of the degree to which the plans would influence fuel demand during a shortage.

Because the fuel shortage varied in severity from state to state, response by state governments varied in similar ways. For example, as of July 1, 1979, Georgia had taken virtually no action to reduce fuel consumption by its residents. Maryland, on the other hand, had implemented at least eight emergency programs by that date.

The various emergency measures taken by states in response to the gasoline shortage and the number of states

involved follow: minimum- or maximum-purchase plans, 16; odd-even license plate fuel purchase plans, 11; flag system to indicate fuel availability at service stations, 10; staggered hours or weekend openings of service stations, 14; emergency hotlines concerning fuel availability, 31; expansion of carpool and vanpool programs, 34; reduced travel by state employees, 34; and increased enforcement of the 55-mph speed limit, 37. This information was derived from a telephone survey conducted by the National Governors Association in June 1979 (4). Unfortunately, data are not available regarding the actual effectiveness of any of these programs in reducing fuel demand or queues at the pumps in particular states. (Research conducted by the Massachusetts Institute of Technology since the shortage indicates that minimum-purchase plans have little effect on gasoline demand. Odd-even plans, on the other hand, appear to reduce gasoline demand by 1-2.5 percent.)

Virtually all states also used their set-asides of gasoline and diesel fuel to combat the fuel shortage. Some states (e.g., Massachusetts) directed much of this fuel to retail service stations in particular regions of the state in order to maintain key local economies such as tourism. Other states apportioned their set-aside supplies among retail stations, mass transportation services, and other fuel users on a case-by-case basis (1).

Though there is no list of all the other actions that states took in response to the shortage, it is clear that additional measures were undertaken by individual states. Colorado, for example, allowed the sale of discounted bus tokens and transit passes at state employment centers and started a voluntary carless-day program under which residents were urged not to drive one day per week.

Local Response

A variety of organizations participated in local efforts to minimize the impact of the 1979 fuel shortage. These organizations included city and county governments, MPOs, transit authorities, private transportation providers, ridesharing organizations, and employers. It must be emphasized, however, that these actors did not participate uniformly in local emergency efforts.

The U.S. Conference of Mayors conducted a telephone survey of 100 cities during the last week of June 1979 to determine (a) the impact of the shortage on these cities and (b) the responses of these cities to the shortage (5). Almost every city surveyed was affected by the shortage either because of substantial increases in the price of fuel or because of reduced allocations of diesel fuel and gasoline for city government operations. Of the cities surveyed, 81 percent did take emergency actions. In the area of passenger transportation, cities took actions such as the following:

1. Reducing travel in city-owned vehicles,
2. Reducing parking rates for carpooling employees,
3. Subsidizing bus passes for city employees,
4. Instituting variable work-hour programs,
5. Implementing restrictions on gasoline sales (e.g., minimum- and maximum-purchase plans), and
6. Expanding city-operated carpool and vanpool programs.

Again, it should be emphasized, however, that these actions were not implemented in any consistent or comprehensive manner.

No national data are available on the emergency programs that were implemented by county governments, MPOs, transit authorities, private transportation providers, ridesharing organizations, and employers. What information is available, however, indicates the following:

1. County governments frequently participated in discussions of alternative regional strategies for reducing queues at service stations and lowering demand for gasoline and diesel fuel. Some county governments played a

coordinating role in regional efforts to respond to the shortage. MPOs generally assumed similar functions, although some actually took the lead in organizing emergency programs.

2. Although a few transit authorities and ridesharing organizations had contingency plans ready for implementation when the shortage struck, the vast majority of these organizations did not. Consequently, most transit authorities and ridesharing organizations had to take action on an ad hoc basis to accommodate sharply increased demand for their services. Some of these organizations did nothing more than attempt to maintain their current service levels.

3. In areas where the shortage was severe (e.g., the Northeast and California), some employers assumed new responsibilities for employee commutation. In general, these employers were those with large work forces. Emergency actions taken by these employers included the introduction and expansion of carpool or vanpool programs, shuttle or subscription bus services, and transit subsidy programs.

Summary

The federal government's response to the 1979 fuel shortage generally included initiatives to increase the supply of fuel rather than to reduce the demand for fuel. (Congress rejected DOE proposals to reduce fuel demand through implementation of national contingency plans or a gasoline-rationing plan.) On the state level, the mandatory programs (e.g., minimum-purchase plans) that were implemented focused on controlling queues at retail service stations rather than on controlling demand for fuel. It is unclear if state government implementation of various voluntary programs (e.g., expansion of carpool and vanpool programs) had any significant effect on fuel demand. Local-level emergency actions varied enormously, although virtually all of them concentrated on lowering fuel consumption.

Finally, it should be stressed again that, with few exceptions, state and local responses to the fuel shortage were not based on detailed contingency plans. Instead, they were the result of ad hoc decisions made with limited information in the midst of the shortage. In this environment, it is hardly surprising that major institutional actors did not react consistently and comprehensively to the shortage.

CURRENT PROBLEMS AND FUTURE OPPORTUNITIES

Although the 1979 fuel shortage had some significant impacts on travel and the national economy, it was relatively brief, geographically dispersed, and only sporadically severe. Moreover, the shortage may have been partly a blessing in disguise, because it refocused federal attention on the need for transportation energy conservation and contingency plans as responses to an environment of rapid inflation, spiraling fuel prices, and uncertain fuel supplies.

Today, interest in conservation and contingency planning remains high within certain parts of the federal government, particularly DOE and DOT (although support for emergency planning is limited even within these two agencies). As part of its statutory responsibilities under the Emergency Energy Conservation Act of 1979, DOE is urging states and localities to prepare transportation energy conservation and contingency plans to achieve voluntary targets established by DOE. DOT is asking MPOs to undertake contingency planning as part of their unified work programs.

In partial response to these federal recommendations, some state energy and transportation departments have prepared or are preparing conservation and contingency plans. Some MPOs, transit authorities, and local providers of paratransit and ridesharing services have written or have begun to write such plans.

Despite these efforts, serious problems remain in the

nation's approach to transportation energy conservation and contingency planning. There is confusion and uncertainty within all levels of government as to the relative importance of conservation and contingency planning in the amalgam of problems that beset the nation. There are still a large number of state governments and localities that have not yet grappled with the difficult issues presented by a fuel-short energy future. There is a serious lack of comprehensiveness, coordination, and consistency among conservation and contingency planning efforts that have been undertaken by different government agencies. In short, there is still no general understanding of the proper way to prepare for a decade that almost certainly will be marked by continually rising fuel prices, occasional fuel shortages, and consequent losses in personal mobility.

Four basic problems currently impede government efforts to prepare comprehensive transportation energy conservation and contingency plans. These problems are

1. Insufficient integration of the federal government's approach to conservation and contingency planning,
2. Decentralized decision-making process for the selection and funding of transportation services,
3. Insufficient state attention to the need for and development of conservation and contingency plans, and
4. Weak local institution (i.e., the MPO) that has some difficulty in focusing on and in coordinating conservation and contingency planning programs.

Insufficient Integration at the Federal Level

As stated earlier, DOT and DOE have begun to focus on transportation energy conservation and contingency planning as issues of critical national importance. To date, however, these issues have received the close attention of only a small number of officials within these two agencies. For the most part, DOT and DOE transportation programs are still being operated as though the 1974 and 1979 fuel shortages were momentary aberrations rather than harbingers of the energy environment of the next decade and beyond. Consequently, DOT and DOE are not prepared to institute prompt, comprehensive, and appropriate responses to future fuel shortages. They are also not in a position to require localities to undertake broad transportation energy conservation programs.

Because DOT and DOE have not organized their own approaches to the energy problem, they may have difficulty urging strong energy-related actions by other federal agencies whose policies and programs affect opportunities for reducing energy consumption and managing fuel shortages. Clearly, though, coordination with other federal agencies is urgently needed. The U.S. Department of Housing and Urban Development through its urban development action grant program, for example, provides public funds for the construction of parking garages in downtown areas, but DOT funds programs to constrain the use of the automobile in these areas.

Decentralized Decision-Making Process

The second key problem is that for more than a decade, it has been a basic tenet of federal policy that state and local actors should establish their own transportation priorities and programs. DOT and other federal agencies have retained review powers and have established general regulations regarding service development and compliance with existing laws; state and local actors, however, have generally been allowed to implement those programs that they feel are more appropriate for their own political, economic, social, and environmental circumstances.

Federal funding practices have followed this general federal policy. The Federal Highway Administration (FHWA), which has the largest transportation budget of any federal agency, allows its funds to be used for highways, ridesharing programs, or as capital for mass transit projects (through the interstate transfer program). The Urban Mass

Transportation Administration (UMTA) also has substantial funding that may be used for any project that is defined as mass transportation. Much smaller amounts of monies from the U.S. Environmental Protection Agency are available for transportation programs that promise reductions in air pollution. In the same way, DOE's small budget for transportation programs may be devoted to any project that helps to reduce energy consumption.

Although this decentralized decision-making process has permitted localities to choose among a wide range of service options related to transit, paratransit, and ridesharing and of federal funding programs, it has also led to several major problems. First, though the process is designed to encourage local debate, the executives of individual transportation agencies have frequently adopted a hands-off approach regarding funding. In this environment, retention of the status quo is unavoidable.

When debate has occurred, it has often seemed interminable. More important, it has often created tensions between constituencies competing for limited funds that may be used for a variety of purposes. Highway interests, for example, have opposed the use of FHWA funds for ridesharing. Transit providers have opposed the use of UMTA funds for paratransit services that would be operated by privately owned entities. Inaction rather than decision has been the common result of this conflict.

These problems are not the only consequences of the current decentralized decision-making process. This process also makes it difficult for states and localities to address new problems such as the need for transportation energy conservation and contingency planning. New problems are often ignored because they are poorly understood, they have no immediately identifiable constituency, and there are no clear federal requirements and priorities for action.

DOT's transportation system management (TSM) initiative provides one example of a new program that has had many difficulties that are, in part, the result of a decentralized decision-making process. TSM theoretically has been a vehicle for low-cost projects designed to improve air quality, conserve energy, expand mobility, and increase the efficiency and coordination of transportation systems. Local planners and decision makers, on the other hand, have often perceived the TSM program as one that contains a wide range of possible actions, no federal preference for any of these actions, and no federal requirements for success. With these perceptions, they have frequently chosen to implement those TSM actions that are least expensive, least controversial, and least experimental, as opposed to those actions that promise to be most effective in reducing vehicle miles of travel or vehicle hours of travel. In many cases, their motivation is only to ensure that federal highway funds continue to flow for local transportation projects. For all these reasons, the TSM program has had only limited success since 1975.

Insufficient State Focus on Emergency Planning

The federal government is not wholly responsible for the lack of state and local attention to conservation and contingency planning in the transportation sector. States are also somewhat responsible for this situation.

At the outset, it must be noted that a variety of factors discourages states from tackling new complex problems. (It must also be said that a few states have surmounted these obstacles. California, for example, succeeded in implementing a strict air pollution control program that requires automobile manufacturers to alter their vehicles in order to sell them in the state. On the other hand, California is big enough to be a fair-sized independent nation. It is not likely that other states could adopt the California approach.) The press of daily business obscures the importance of attending to these problems before they affect society. The lack of hard data on the effectiveness of various approaches to new problems makes it politically risky for state political leaders to adopt one approach instead of another. A dearth of state funding for research,

experimentation, and demonstration programs forces states to leave such efforts to the federal government.

Another key obstacle to state action in the area of transportation energy conservation and contingency planning is the fact that the beneficiaries of such planning are not immediately identifiable or powerful. Indeed, when fuel is plentiful, strong transportation energy conservation programs may hurt many people, businesses, and government agencies, at least in the short term. Service station operators, automobile dealers and manufacturers, oil companies, and other persons who are engaged in the sale of products and services for automobile travel may lose revenues. State highway departments may lose revenues needed for their programs (because of reduced gasoline tax receipts). Individuals may lose mobility (if increased fuel prices, for example, force people to travel less because alternative transportation modes do not exist). In this environment, strong conservation programs are accompanied by enormous political risk.

Finally, states have historically viewed fuel shortages as national problems that deserve national solutions. State governors, legislatures, and the executives of state agencies have always assumed that in the event of a serious shortage, the federal government would intervene to increase fuel supplies and/or restrain fuel demand.

The Problems of MPOs

On the local level, MPOs are the natural choice for leadership of local and regional conservation and contingency planning programs. Yet MPOs clearly face serious problems in assuming this function. MPOs historically have served as technical organizations that provide analysis of major regional capital investments such as highways and rail transit lines. They have also undertaken generalized regional transportation planning under federal requirements.

The focus of MPOs on capital investments has forced them to give less attention to service-planning issues. This focus has also made it difficult for MPOs to alter their priorities as local circumstances change. Put another way, capital investments are long-term projects that are hard to stop or modify once they are begun. Consequently, money and attention continue to be given to these investments even if it appears that other projects should assume higher priority as a result of external events. Debate between interest groups and the lack of MPO authority for final decisions have caused new ideas to languish in the face of obvious needs for action.

When MPOs do wish to give attention to service-planning and other noncapital issues, a variety of pressures combines to force MPOs to focus on short-term rather than on long-term questions. Constituent agencies of the MPO want the planning body to examine immediate issues (e.g., the impacts of new federal regulations) so that staff of the constituent agencies can continue to work on day-to-day operating problems. Problems with the existing public- and private-sector transportation system (e.g., a lack of funding and intermodal competition) take precedence over long-range issues. Long-term questions such as changes in land use patterns are difficult to study because they involve sweepingly controversial issues for which there may be many right answers or few hard data. In addition, efforts to answer long-term questions are often frustrated by elections, new appointments, and other changes in the political environment that may eradicate the institutional consensus for action on these questions.

Another problem is that MPOs have no leverage to bring new actors into local efforts to respond to new regional problems. Major employers, for example, should be key participants in local conservation and contingency planning programs. Yet many of these employers are national corporations that may not wish to alter their companywide policies to suit local priorities. In the absence of pressure from higher levels (i.e., the federal government), these actors may well choose to do nothing.

In the area of transportation energy conservation and contingency planning, the job of MPOs is made particularly difficult by the fact that there are no tangible and immediate incentives or rewards for these types of efforts. Conservation and contingency programs frequently involve modifications to and regulation of individual travel behavior—unpopular acts in any environment. They may require shifting money from programs that are popular but have no energy benefits to programs that have no visible constituency but will have benefits apparent only in the event of a fuel shortage. In addition, conservation and contingency programs are not supported by substantial funding specifically designated for energy-related transportation programs. (DOE's transportation budget is minuscule in relation to the funding available from other federal agencies for other transportation projects.)

MPOs should lead local efforts to develop strategies (for transit, paratransit, and ridesharing) for energy conservation and future fuel shortages. They should coordinate the conservation and contingency planning efforts of various providers of such services as well as local governments. However, the current institutional environment does not encourage these approaches. On the contrary, these activities are specifically discouraged by existing institutional realities.

Future Opportunities

Current federal policies and the recent passage of the Emergency Energy Conservation Act (EECA) of 1979 may help to remedy some of the state- and MPO-based problems described above. Since this act gives states first-line-of-defense responsibilities in the event of future fuel shortages, state political leaders may perceive that it is in their political self-interest to ensure that both state and local actors have strong contingency plans ready at all times. (The act requires each state to implement a contingency plan in the event of a fuel shortage. This plan must meet an energy conservation target established by the President. If a state fails to implement a contingency plan, or if the state plan fails to achieve the conservation target, a federal contingency plan may be imposed on that state.) Equally important, these officials may conclude that the presence of comprehensive state and local energy conservation programs is essential to the success of contingency plans based on the 1979 act. Finally, state leaders may realize that they can benefit themselves and their constituents if they support or implement positive programs now (e.g., expansions of transit service and state carpool and vanpool programs), while the federal government is introducing negative programs (e.g., oil import fees, import quotas, and decontrol of oil prices).

All of these factors may spur states to undertake conservation and contingency planning programs. These factors may also encourage states to give their MPOs (or other local agencies) clear responsibility to prepare coordinated local responses to future energy shortages. None of this activity, however, is guaranteed because DOE is not currently mandating the preparation of EECA plans by the states.

If DOE does make the EECA process mandatory in the near future, DOT might take several steps to reinforce the EECA process and ensure that transit, paratransit, and ridesharing strategies receive full attention in each state's development of an EECA plan. If DOE does not make the EECA process mandatory, however, other federal approaches will be needed to ensure that states develop comprehensive plans. In this event, DOT should lead the federal effort.

DOT might adopt several strategies regardless of DOE action concerning EECA. At a minimum, DOT should make the development of state transportation energy conservation and contingency plans a condition for its funding of state-sponsored transportation projects. In addition, DOT should require states to designate lead agencies at the local level to coordinate the design of locally based plans for

individual transit, paratransit, and ridesharing services.

With new statutory authority, DOT could require that each state prepare a conservation and contingency plan that includes a basic package of actions to reduce energy consumption. Possible elements of this mandatory package might include the following:

1. A broad public information program to encourage energy-efficient automobile travel and encourage public use of transit, paratransit, and ridesharing services;
2. Programs to ensure that carpools, vanpools, transit, and paratransit vehicles have access to fuel during shortages (assuming, of course, that DOE's fuel allocation program expires on schedule in September 1981); and
3. Programs to expand public use of transit, paratransit, and ridesharing services during shortages (e.g., state implementation of a network of park-and-ride lots, high-occupancy-vehicle lanes, as well as a state carpool and vanpool program).

DOT might also urge states to develop a comprehensive program to reduce transportation energy consumption by state employees as well as programs to reduce automobile travel and queues at the pump (e.g., increased parking and toll charges, sticker plans, and employer-based travel reduction strategies). DOE, however, probably is the proper source of a federal requirement that states adopt these strategies.

Federal pressure on the states by either DOE or DOT will not be adequate for the task of preparing the nation for future fuel shortages in the transportation sector. For this reason, it is recommended that DOT take steps to require local conservation and contingency planning efforts regardless of DOE actions concerning the EECA process. Specifically, it would seem wise for DOT to mandate that all MPOs and federally funded transportation providers develop conservation and contingency plans. DOT should make the preparation of these plans a condition for its funding of local transportation projects. If DOT wished to take particularly strong action, the agency might require that the plans of local transportation providers include actions that will enable these providers to accommodate specified increases in demand that could result from fuel shortages of different severity (e.g., increases in demand of 10, 20, and 50 percent).

To encourage states and localities to prepare high-quality plans and to ensure that these plans can be implemented, DOT might ask Congress to appropriate new monies that are specifically designated for energy-related efforts. Some of this money could be devoted exclusively to planning. Equally important, however, is the creation of a federal emergency fund that states and localities can tap during a fuel shortage to expand their transit, paratransit, and ridesharing services and to operate other contingency programs.

Finally, it would seem wise for DOT to continue its efforts to publicize the most effective types of contingency strategies and the best examples of state and local conservation and contingency plans.

All of the preceding recommendations explicitly involve strong federal action to ensure that energy planning in the transportation sector receives high priority from both state and local officials. More important, the top-down approach that is recommended here is designed to eliminate many of the institutional impediments to conservation and contingency planning that currently exist at state and local levels. Through the substitution of strong federal requirements for a decentralized decision-making process, state and local debate over program priorities can be reduced and the focus can be shifted to action. Such an approach will force states and localities to extensively analyze service planning and restructuring issues instead of only major capital investments. A requirement that states and localities prepare conservation and contingency plans before DOT will approve funding proposals almost certainly will generate a constituency for the development of these

plans. Finally, this approach will add to the EECA message that states and localities are expected to play the leading role in future government responses to energy shortages.

DOT and DOE are not the only federal agencies that might play major roles in promoting or requiring emergency planning by states and localities. Others could also assume substantial responsibilities in this area. As noted earlier, however, major institutional obstacles to conservation and contingency planning exist at the federal level as well as within states and localities. The lack of a coordinated federal approach to energy emergency issues, however, poses a serious threat to the success of state and local planning efforts.

To achieve this coordination, several steps may be necessary. First, it may be highly desirable for DOT and DOE to conduct internal reviews of their own policies, programs, and regulations to isolate obstacles to coherent emergency action. DOT, for example, might review its current emphasis on providing new capital rather than operating assistance funds to transportation providers. The agency might examine its policies toward ridesharing and other low-capital transportation projects to determine if a separate funding category is needed for these projects. DOT might analyze the substantial number of planning requirements that MPOs and transit authorities must currently satisfy to determine which of these requirements makes sense in an environment characterized by unstable petroleum supplies and rising fuel prices. Various DOT regulations (e.g., Section 504, Section 13c, and Buy American requirements) deserve study with regard to their application during energy shortages.

For its part, DOE's funding of state and local energy projects may warrant some review to determine if these projects promote emergency preparedness. The agency might examine means by which essential activities, including mass transportation services, can be assured of access to fuel during shortages if DOE's fuel-allocation program is terminated in 1981. Various kinds of line-control measures should be studied to identify those that deserve particular DOE support in the event of another shortage.

If DOT and DOE can reach agreement on in-house changes that are needed to respond to the energy problem, they will be in a good position to ask other federal agencies to join with them in efforts to promote or require transportation energy conservation and contingency planning. At a minimum, the policies and programs of other

federal agencies should be coordinated with those of DOT and DOE.

As one example of the usefulness of coordination, large private employers could be encouraged to develop conservation and contingency programs as part of broader local energy activities if (a) the Office of Management and Budget provided tax credits to employers who fund such programs, (b) the Internal Revenue Service determined that these programs do not constitute taxable fringe benefits for employees, (c) the Environmental Protection Agency required employers to prepare these programs in conjunction with local efforts to reduce air pollution, (d) the U.S. Department of Defense required its major contractors to develop these programs, (e) the U.S. Department of Housing and Urban Development funded only those land use developments for employers (e.g., industrial parks) that minimize energy consumption, (f) DOE encouraged states to require employers to implement conservation and contingency plans as part of state-sponsored EECA plans, and (g) DOT and DOE provided special funds to states and localities so that they could provide transportation services or technical assistance to employers.

Of course, coordination of federal policies and programs (and revision of these policies and programs where necessary) will be a lengthy process. Since the arrival of a fuel shortage will leave no time for extended deliberations, it would be most beneficial if the federal government began this coordination effort immediately.

REFERENCES

1. R. Shriver Associates. Evaluation of the Gasoline-Allocation Program. Office of Policy and Evaluation, U.S. Department of Energy, Draft Final Rept., Dec. 1979.
2. Emergency Stockpiling of Buses. Urban Mass Transportation Administration, U.S. Department of Transportation, Notice 9300.1, June 20, 1979.
3. Interim Guidelines, Bus Rehabilitation Program. Urban Mass Transportation Administration, U.S. Department of Transportation, July 9, 1979.
4. State Energy Emergency Response Measures: A Recent Survey. National Governors Association, Washington, DC, July 6, 1979.
5. The Gasoline Shortage and the Cities. U.S. Conference of Mayors, Washington, DC, June 27, 1979.

Background Information: Gasoline-Rationing Plan

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To better enable the United States to deal with future energy shortages, the U.S. Congress passed the Emergency Energy Conservation Act of 1979. This act requires that a gasoline-rationing plan be developed. The gasoline-rationing plan would not be put into effect unless a serious energy supply crisis occurs.

After the plan is formally submitted to Congress, Congress has 30 days to review it. Unless a joint resolution of disapproval is enacted, the plan would be considered approved and would then remain in standby status.

Rationing would not be imposed unless the President finds that a 20 percent shortfall exists or is likely to exist for at least 30 days. The President must notify the Congress of his finding together with a request to implement rationing. Either house of Congress may then disapprove the President's decision within 15 days. If the President finds it necessary to impose rationing with a less than 20 percent shortfall, both houses of Congress must approve its implementation.

The President, by executive order, has delegated the authority to develop the standby gasoline-rationing plan to

the U.S. Secretary of Energy. DOE has issued a proposed plan for public comment. Features of the proposed plan are discussed here briefly.

RATION ENTITLEMENTS

Eligibility for ration allotments would be determined on the basis of motor vehicle registration records. The calculation of ration coupons issued within each state would be in proportion to the state's base-period use of gasoline; thus, the degree of shortfall would be equally shared among the states. Supplemental allotments would be granted for certain priority activities to ensure the maintenance of essential public services. Supplemental allotments would also be granted to businesses and government organizations with significant off-highway gasoline requirements.

Although initial allotments to firms would be vehicle-based, supplemental allotments that reflect historic use would be provided as soon as practicable after the start of rationing. State and local rationing offices, established by state and local governments, would provide supplemental