

Session 5 Issues in Energy Contingency Planning

State and Local Energy Contingency Planning in Transition

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Summarized in this paper are the results of an earlier study conducted for the U.S. Department of Transportation (DOT) on selected case studies of state and local responses to the 1979 fuel shortage (1). The transition undergone by energy contingency planning in response to recent trends in the supply and demand for petroleum and the changing role of the federal government is described. This transition, and the implications for state and local energy contingency planning, is illustrated through reference to ongoing contingency planning efforts in the state of Maryland. The changing environment under which contingency planning is now occurring has resulted in a shift in emphasis on past issues that have arisen in contingency planning and has focused attention on several emerging issues. Some of these issues are identified in the last section of this paper.

REVIEW OF STATE AND LOCAL RESPONSES TO THE 1979 FUEL SHORTAGE

Although several efforts have been made to develop, review, and evaluate state and local energy contingency plans by various governmental agencies, there has been significantly less emphasis on evaluating the performance of these plans during actual fuel shortages. This disparity may be partly attributable to the infrequent occurrence and relatively short duration of past fuel shortages as well as the difficulty of collecting data for retrospective studies of this nature.

Because of the need for such information to ensure that contingency plans being developed were relevant and capable of being implemented during fuel shortages, the Office of the Secretary, DOT, requested that a series of case studies be developed of emergency actions implemented or attempted during the 1979 fuel shortage. Sites selected were Dallas-Fort Worth, Los Angeles, Minneapolis-St. Paul, New York State, Rhode Island, and Seattle. To ensure that these sites reflected a diverse range of experience in dealing with the 1979 fuel shortage, the following criteria were used for selection: severity and duration of the fuel shortage, existence of a contingency plan, relative impact on the tourist and recreational industry, and local responsiveness to requests for cooperative participation.

State and local governmental officials and repre-

sentatives of concerned private-sector interest groups (e.g., tourist industry, gasoline dealer associations, automobile clubs) were contacted at each case study site and appointments for interviews were arranged. These interviews focused on identifying the major emergency actions implemented, related implementation problems, and actions planned but not implemented.

Actions Implemented and Problems Encountered

At the case study sites, five types of emergency transportation actions to conserve energy were most commonly implemented or attempted during the 1979 fuel shortage. These actions and the problems encountered are summarized in the following paragraphs.

Expansion of Public Information and Marketing Distribution Systems

All the case study sites attempted to maintain and expand their capability to deliver timely and effective travel information. State governments generally operated telephone hotlines to inform motorists about gasoline availability and purchase restrictions, whereas transit agencies most often sought to disseminate travel information and fare payment options through decentralized distribution centers.

Unfortunately, the telephone hotlines were often unable to provide critical information to motorists on the availability of gasoline for specific routes or destinations. For transit operators decentralization was often the only option because their telephone information centers--despite operating in many instances 24 hours a day--did not have the capacity to handle incoming calls in a timely manner. Telephone information systems were handicapped by declines in phone-operator productivity because callers were unfamiliar with how to use transit, phone system capacity constraints, and shortages of trained operators, compounded by the long training periods for newly hired personnel.

Implementation of Odd-Even or Minimum-Maximum Fuel Purchase Restrictions

Odd-even and minimum-maximum purchase restrictions were implemented at all but one of the case study

sites. The general consensus was that these measures reduced panic-induced hoarding of gasoline supplies and assured the general public that state and local governments were taking some action to alleviate the fuel shortage.

The opposition of major interest groups (i.e., the tourist industry, gasoline dealers, and the general public) in many cases delayed the timely implementation of gasoline purchase restrictions. Thus, by the time such requirements were implemented, the fuel shortage had peaked and gasoline supplies were becoming more available. Another problem was presented by the difficulty of monitoring and enforcing compliance with gasoline purchase restrictions.

Rehabilitation and Placing in Service of Standby Reserve or Mothball Fleet Buses

Contingency plans developed by transit operators at the case study sites before the 1979 fuel shortage placed maximum emphasis on expanding transit capacity by rehabilitating standby reserve or mothball fleets of old buses and placing them in service. Some transit operators succeeded, although relatively few additional buses were put into service.

As this is one of the few measures that permit motorists who are unable to purchase gasoline to maintain mobility, at least partially, it is vital to understand why this measure was not implemented to a far greater extent. The primary constraint was the lack of sufficient inventories of readily repairable buses and spare parts. Other barriers included insufficient funds for overtime labor expenses and spare parts at a time when transit agency budgets were pressured by rising diesel fuel costs; lengthy schedules for placing additional buses into service, attributable to inadequate personnel and equipment and the long lead times needed to repair buses; and inability to freely place rehabilitated buses in certain service operations because of their poorer levels of performance.

Emergency Expansion of Ridesharing Services

Local ridesharing agencies were only partly successful in expanding services to meet the sudden surge in demand for carpools and vanpools. Provision of matchlists to potential carpoolers and vanpoolers was characterized by long turnaround times, which limited the ability of ridesharing agencies to respond in a timely manner. Despite efforts to expand staffs, the time necessary to enter information in the ridesharing agency's data base, and the rise in applications for matching precluded maintaining, much less shortening, turnaround times. For short-term fuel shortages, matchlist turnaround time is a critical element in determining whether efforts to expand ridesharing will be effective.

Efforts to expand vanpooling encountered two additional barriers. First, obtaining timely delivery of new vans proved difficult, due both to normal production plant cycle changes and to the sudden increase in demand for such vehicles. Second, vanpool services which tried to expand had difficulty obtaining gasoline. Vanpool programs that had their own fuel storage facilities were somewhat insulated from this latter problem.

Monitoring of Transit Ridership and Shifting of Buses to Most Heavily Patronized Routes

All transit systems indicated that they monitor patronage, although buses rarely were shifted to those routes that showed the greatest increase in demand during the 1979 fuel shortage. Operators

cited the need to hold public hearings, union labor agreements, and technical scheduling complexities as the greatest barriers to changing transit schedules or allocating vehicles and drivers to routes. Moreover, transit management claimed to operate at maximum load capacity during peak travel periods in general, and therefore had limited flexibility to transfer vehicles among routes.

Actions Planned But Not Implemented

Two general types of emergency actions were included in most energy contingency plans at the case study sites but were never implemented. One type is the adoption of variable work periods--particularly flexible or staggered work hours and less frequently compressed work weeks. Transit operators view these actions as attractive options for smoothing peak-period demand and for increasing passenger volumes during the shoulder periods. However, unless employers have prepared plans and coordinated their efforts with the transit operator before a fuel shortage begins, the time required to implement a program for variable work hours would preclude its application in all but the longest and most severe fuel shortages.

A second class of actions, invariably mentioned in contingency plans but almost never implemented, involves changing transit system operations (e.g., instituting skip-stop and express operations, removing seats to increase standing room, adjusting bus schedules, reducing the number of stops, and adding turnbacks). Such actions, which generally involve fine-tuning of the transit system, must be carefully preplanned in order to be implemented. Other actions mentioned in some energy contingency plans, such as adopting differential pricing for peak- and off-peak periods and increasing use of paratransit, were not used at the case study sites.

Observations and Implications of the Case Studies

A comparative assessment of the responses from the case study sites, primarily of a qualitative and judgmental nature, suggested that the emergency actions implemented were not highly effective. Efforts to expand ridesharing and disseminate travel information apparently were more successful than efforts to expand transit system capacity.

Seven promising actions that merit further study for use in contingency plans were identified and discussed in the study:

- Establish reserve transit bus fleet,
- Establish reserve school bus fleet,
- Develop variable work hours program,
- Implement expansion of carpooling program,
- Implement transportation and transit information dissemination,
- Set up gasoline sales and service monitoring, and
- Establish gasoline sales purchase requirements.

Review of the local area emergency plans prepared before the 1979 fuel shortage showed that the plans:

- Contained similar actions and failed to reflect the unique characteristics of the local areas for which they were prepared;
- Lacked sufficient depth to ensure that specific actions would be implemented;
- Were often designed to focus attention on energy conservation or promote capital investment, rather than as actual plans;
- Were not updated once completed; and
- Varied greatly in their scope or comprehensiveness.

To remedy some of these deficiencies, it was recommended in the study that more emphasis be placed on:

- Developing more comprehensive plans with detailed implementation procedures,
- Budgeting funds to be used only during fuel shortages for implementation of emergency actions,
- Updating contingency plans regularly, on a periodic basis, and
- Designing and developing monitoring and information systems on gasoline use to provide early detection and real-time monitoring of shortages--particularly to trigger actions.

ENERGY CONTINGENCY PLANNING IN TRANSITION

Recent trends in the supply and demand for petroleum and the changing role of the federal government in energy contingency planning are prompting changes, both in the primary motivations behind contingency planning and in the manner in which it is being carried out by state and local governments. During the past 2 years, concern about domestic preparedness for dealing with fuel shortages has been tempered by gradual declines in the demand and price of petroleum.

These declines may be attributed to increased energy conservation, greater reliance on alternative energy sources, decreased industrial demand for petroleum fostered by a severe worldwide economic recession, and the deregulation of the domestic petroleum industry. Concern has also been tempered by the increased need for various suppliers to place more oil in the marketplace to service their international bank debt and rebuild or strengthen their local economies. New sources of supply outside the Middle East, in such places as Mexico and the British and Norwegian North Sea, have lessened the possibility of severe disruptions in imported oil. Demand for oil imports has dropped so drastically that 1982 imports were about half the imports of a few years ago (2).

These conditions have created a relatively favorable balance of supply and demand for petroleum fuels existing today, in turn creating a favorable environment for changing the federal government's role in contingency planning.

The removal of federal price and allocation controls on domestic crude oil and petroleum products in January 1981, and the subsequent rescinding of critical elements in the Federal Standby Emergency Energy Conservation Plan, marked the beginning of a new national policy toward contingency planning. Funding of state and local energy contingency planning has been reduced significantly. In contrast to the regulatory and legislative approach of the previous administration, the U.S. Department of Energy (DOE) National Energy Plan--Securing America's Energy Future (3)--emphasizes the role of market forces as a means of managing future fuel shortages. The plan also places greater reliance on the growth of the Strategic Petroleum Reserve (SPR), dual fuel capabilities of industrial concerns and utilities, increased domestic output of petroleum, and cooperative agreements with the International Energy Agency (IEA) as tools for avoiding, or ameliorating, the negative impacts of fuel supply disruptions.

IMPLICATIONS FOR STATE AND LOCAL CONTINGENCY PLANNING

There is a considerable divergence of opinion on whether the policies of the federal government are sufficient to deal with major fuel shortages if they should occur. Fortunately, the opportunity to test

these policies has not arisen. In a report (4) to Congress in 1981, the U.S. General Accounting Office (GAO) made the following observations:

- The nation is grossly unprepared to deal with a 3 million barrel per day shortfall;
- There is no plan for emergency surge oil production;
- There is no plan for using the SPR, the nation's most critical disruption insurance;
- Mandatory petroleum allocation regulations have expired and should be replaced by Congress; and
- The emergency oil reserve, both here and in other industrialized nations, is inadequate and the international oil-sharing mechanism is too narrowly focused and may not work effectively.

Although somewhat dated, many of the GAO observations still appear, at least in part, to be valid today.

As envisioned under current federal policies that relate to the decontrol of crude oil and petroleum products, the market would serve as an allocation mechanism during a fuel shortage, because the price would be allowed to rise to the market clearing level. Accordingly, the rise in price would be of sufficient magnitude to reduce the demand for gasoline to the level of supply. Even if the marketplace allocates gasoline according to what the consumer will bear, a number of critical issues that relate to equity and costs must be considered. Certain elements of the population are likely to be adversely affected by fuel shortages more than others (e.g., low-income people, public transportation services, charitable and health service organizations, and government services).

The continuing turmoil in the Middle East, particularly the war between Iran and Iraq--two major oil exporters, and the conflict in Lebanon have served to reinforce the possibility of future disruptions in oil supplies. The United States still depends on imports for about 25 percent of its oil, and oil still accounts for 40 percent of the country's energy consumption (5). The uncertain performance of the marketplace during fuel shortages, the absence of energy emergency management legislation to grant governors the authority to control the allocation and prices of petroleum products, and the limited role that the federal government has adopted in planning for fuel shortages have prompted many state and local governments to take the initiative in developing energy contingency plans. Many states have provided their governors with the authority to assume emergency powers during severe fuel shortages.

State and local contingency planning efforts have ranged from a hands-off policy in such states as Louisiana and Georgia to potentially full-scale programs in other states, such as Washington and California (6). In the absence of a federal framework, a variety of emergency plans is likely to be developed. Of even greater concern, however, are the potential legal questions posed by state emergency plans that often rely on fuel set-aside or other state allocation programs for petroleum products. The lack of coordinated emergency planning efforts and potential legal challenges to key provisions comprise a major barrier to ongoing state and local emergency planning efforts.

New State Contingency Planning Initiatives: Review of Efforts in the State of Maryland

The state of Maryland experienced severe fuel shortages during the 1973-1974 Middle East oil embargo and during the summer of 1979 when the flow of Iranian oil was disrupted. Although the 1979 crisis

was much shorter than the earlier one, lasting only from the end of May through July, taxable gasoline sales were down 12 percent from the previous year as compared to a decline of between 5 and 10 percent during the 1973-1974 Middle East oil embargo (7).

At the time that changes in federal government policies on contingency planning emerged, many state governments, including the state of Maryland, were involved in the preliminary stages of preparing emergency energy conservation plans as recommended by the Emergency Energy Act of 1979 (EECA).

Despite the withdrawal of federal funds for further development of the EECA plans, there was considerable community, local government, and private support for continuing the contingency planning effort. This attitude was bolstered by the findings of the GAO report to Congress (4), which pointed out several inadequacies in existing federal plans to manage fuel shortages, as well as the growing concern expressed by social service agencies and other citizen groups on the serious implications for low-income people of a steep rise in fuel prices during a fuel shortage.

Consequently, the Maryland Energy Office (MEO) continued to work on developing an energy contingency plan. It is noteworthy that, unlike previous contingency planning efforts that had been initiated largely in response to federal recommendations and the availability of substantial planning funds, this decision to continue the contingency planning process was made on the basis of broad public and private sector support throughout the state.

To ensure that the contingency planning effort was responsive to the concerns of consumers, community groups, local government agencies, and private sector interests, a highly participatory planning process was essential. The MEO used a two-tier coordinating and consulting system to continue development of an energy contingency plan. The first level consisted of a 20-member steering committee, appointed by the MEO, and authorized by the Maryland Department of Natural Resources. The purpose of the steering committee is to provide guidance to the state in developing an energy contingency plan through the review, selection, evaluation, and recommendation of emergency measures. Membership is based on represented interests. Table 1 gives the composition of the steering committee.

The second level, the advisory panel, is comprised of 40 members representing commercial trans-

portation, personal transportation, government and institutional, commercial and industrial, retail sales, services, and tourism interests. Members were recruited jointly by the MEO and the steering committee and were selected according to their ability to influence, or be affected by, potential emergency measures. Table 2 gives the membership of the advisory panel. The Panel's primary role is to advise the steering committee on the review, selection, evaluation, and recommendation of emergency measures. Although participation on both the steering committee and the advisory panel is voluntary, there has been no problem in securing a broad representation of interests.

Energy Contingency Planning Process

Beginning in October 1981 the Maryland Energy Office presented an initial list of 33 potential emergency actions to the steering committee. More than half related to motor fuel and the remainder related to heating oil. The committee refined the potential actions and, based on a qualitative assessment, reduced the total number of measures to 29. A subsequent review by the advisory panel reduced the total number of measures to 18.

The steering committee then recommended that a more detailed impact assessment be performed on 12 of the more promising measures. The selection of measures was a lengthy and thorough process, which required five steering committee meetings and one advisory panel meeting during a 6-month period.

An additional eight steering committee meetings and one advisory panel meeting are anticipated during the next 9 months. The entire process from initial preparation to final plan will have required nearly 3 years.

Observations and Emerging Issues

Based on the state of Maryland's experience and continuing involvement in energy contingency planning, the following observations may be made:

- In contrast to past energy contingency planning efforts, state and local efforts are more likely to be motivated by local area public and private interests rather than response to federal policies;
- More emphasis is being placed on ensuring that

Table 1. Steering committee members and representative interests.

| Member | Representative Interest |
|--|--|
| Voting | |
| Maryland Energy Office | State office authorized to develop emergency plan |
| Citizen Advisory Committee | Citizen interest, 3 year's experience advising Maryland Energy Office |
| Local Government Steering Committee | Local governments; 3 year's experience advising Maryland Energy Office |
| Maryland Department of Transportation | Public transportation |
| Baltimore Fuel Fund | Inner city residents; low income citizens |
| Independent Metropolitan Oil Dealers Association | Inner city heating oil dealers supplying oil to low income residents unable to obtain credit |
| Regional Planning Council | Regional planning issues |
| Metropolitan Washington Council of Governments | Regional transportation and contingency planning |
| Department of Human Resources | Community programs administration, low income citizens |
| Maryland Chamber of Commerce | Business community |
| Petroleum Council of Maryland | Petroleum distributors including jobbers |
| Greater Washington/Maryland Service Station Association | Direct link to consumer petroleum distribution |
| Maryland General Assembly Joint Committee on Energy Policy | Energy policy |
| Maryland Petroleum Institute | State oil companies |
| Nonvoting | |
| Five staff members, Maryland Energy Office | |
| Peat, Marwick, Mitchell and Company (EECA Management Plan) | |

Table 2. Advisory panel members.

| Representative Interest | Member |
|--------------------------------------|--|
| Retail Sales and Service and Tourism | Maryland Department of Economic and Community Development, Office of Tourist Development Maryland Controller's Office, Motor Fuel Testing and Inspection Ocean City Convention and Visitors Bureau Maryland Hotel and Motor Inn Association Maryland Recreation and Parks Association Maryland Retail Merchants Association |
| Government and Institutional | State Department of Education Department of Health and Mental Hygiene Department of General Services Public Service Commission Mayor's Office of Energy University of Maryland Department of Agriculture Maryland Office on Aging League of Women Voters NAACP Metropolitan Baltimore Energy Coalition State Office on Aging The Salvation Army DC/Maryland Utility Association Citizens Advisory Committee, Low-Income Programs Subcommittee |
| Residential and Consumer | Ridex Corporation Maryland Hospital Association Automobile Club of Maryland Mass Transit Administration Maryland Bus Association Maryland Association of Community Action Agencies |
| Commercial Transportation | Maryland Motor Truck Association State Railroad Administration State Highway Administration State Police Department AFL-CIO |
| Other Commercial and Industrial | Mid-Atlantic Food Dealers Association Maryland Department of Economic and Community Development, Economic Development Research Marine Trades Association of Maryland Bethlehem Steel Corporation Maryland Industrial Group Associated Jewish Charities and Welfare Fund Maryland Electric Utility Council Building Owners and Managers Association |

the energy contingency plan has been developed through a broad-based participatory process, with maximum emphasis on ensuring the cooperation of all parties likely to be affected by a severe fuel shortage or likely to be involved in implementing emergency actions;

- Some state and local governments, with the support of public and private sector interests, are assuming greater responsibility for tailoring contingency plans to their specific environment;

- More emphasis on economic and equity issues, particularly the likely impact of fuel shortages on poor or low income citizens, characterizes much of the support for state and local energy contingency planning; and
- The lack of a federal framework for emergency allocation of petroleum resources makes state and local plans involving state allocation actions legally ambiguous.

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REFERENCES

1. O. Schueftan and R. Ellis. Federal, State, and Local Responses to 1979 Fuel Shortages. Office of the Secretary, U.S. Department of Transportation, Vols. 1 and 2, Feb. 1981.
2. R. Corrigan. When the Next Gas Crunch Comes. American Automobile Association, Falls Church, Va., 1982.
3. Securing America's Energy Future: The National Energy Policy Plan. U.S. Department of Energy, July 1981.
4. The United States Remains Unprepared for Oil Import Disruptions. Rept. EMD-81-1171. (2 Vols.) U.S. General Accounting Office, Sept. 1981.
5. Should the U.S. be Planning for Another Oil Shock? Business Week. April 4, 1983, pp. 104-106.
6. R. Corrigan. When the Next Gas Crunch Comes. American Automobile Association, Falls Church, Va., 1982, p. 5.
7. C.R. Goodman. The 1979 Gasoline Shortage: Impact On Travel In the Baltimore Region. Technical Memorandum 39. Baltimore Regional Planning Council, Baltimore, Md., Feb. 1980.