

transportation energy contingency strategies



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part one

**the planning
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16. Abstract This report represents a further effort by the U.S. Department of Transportation (DOT) to provide technical assistance to State and local governments in preparing energy contingency plans, particularly focused on transit, paratransit, and ridesharing services. This report provides guidance to the myriad of actors involved in the planning and implementation of transit, paratransit, and ridesharing initiatives. The report is presented in three parts: <u>Part 1 - The Planning Process: Roles and Responsibilities</u> Part 1 describes the organizational process that will help State, regional, and local officials develop a basic component of the contingency plan; namely, the preparation of various transportation options. <u>Part 2 - Synopsis of Actions</u> Part 2 describes specific actions appropriate for various actors with respect to varying conditions, including severity and duration of shortfalls, the lead time required for planning and implementation of various actions, and the barriers to their timely adoption and implementation. <u>Part 3 - a model case study of the contingency planning process (being developed).</u>					
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TRANSPORTATION ENERGY CONTINGENCY STRATEGIES

PART ONE

THE PLANNING PROCESS: ROLES AND RESPONSIBILITIES

SPONSORED BY:

FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF HIGHWAY PLANNING

AND

URBAN MASS TRANSPORTATION ADMINISTRATION
OFFICE OF PLANNING MANAGEMENT AND DEMONSTRATIONS

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FOREWORD

This report represents a further effort by the U.S. Department of Transportation (DOT) to provide technical assistance to state and local governments in preparing transportation energy contingency plans, particularly focused on transit, paratransit, and ridesharing (TPR)* services. Last year, several efforts by local and regional entities to prepare for dealing with energy shortages in the transportation sector were summarized by the U.S. Department of Transportation in a document called "Transportation Energy Contingency Planning: Local Experience." That report was distributed in July, 1979 and provides a comprehensive listing of the kinds of activities some local entities have undertaken in preparing to deal with energy shortages. It represented a follow-up to the FHWA/UMTA memorandum in the spring of 1979 strongly encouraging contingency planning as an integral part of the ongoing transportation planning process. However, while contingency planning must be integrated with the ongoing planning process, at stake are issues much more visible and important to a broad cross-section of the public than most transportation planning issues. Since this activity is extremely important and visible, it is essential that it be done well and accomplished in a timely manner.

This report provides guidance to the myriad of actors involved in the planning and implementation of TPR initiatives. Part I concentrates on

*The definitions of transit, paratransit, and ridesharing often overlap. All three terms are at times used alone to denote the three kinds of actions. We use TPR to stress the desirability of including the entire range of multi-passenger transportation options.

describing the organization of the process, and Part II on the specific actions appropriate to various actors. While it focuses on strategies that may be implemented more readily in urbanized areas, the process and many of the initiatives discussed are also applicable to small urban and rural areas.

TPR initiatives certainly are not a panacea to deal with all our energy problems. However, they are very important and deserve very high priority attention. In recent years TPR initiatives have received increasing focus as a response to a number of societal needs, including providing better mobility and reducing congestion and air pollution in an economical and environmentally sound way. The shortage, uncertainty, and increasing expense of energy expected to characterize the next decade will greatly increase public pressures for TPR initiatives to help people maintain their mobility. An effective response to these pressures will require much greater effort, priority, and cooperation among actors than has occurred in the past. The excessive advocacy of one or another initiative or actor as the "only" way to solve all our energy problems is itself part of the problem. All the possible ideas, all levels of government, all relevant private institutions, and a great deal of cooperation and priority will be required to credibly cope with the need to maintain mobility. The relationship between different approaches and actors is, in reality, far more symbiotic than competitive in achieving that goal.

This report will help all of the relevant actors understand the context within which they are operating, and the likely activities of other participants. Governors, state departments of transportation, other state

agencies, transit operators, mayors, cities, counties, metropolitan planning organizations, private transportation providers, employers and others all have important roles to play. Because of the great variety of institutional arrangements across the country, it is impossible to deal uniformly with these roles, so this report deals with generic actors who perform each role. In this sense, it describes the roles which need to be played, rather than prescribing who should play them.

This report does not provide a "cookbook" approach to contingency planning, but offers a number of insights and recommendations on how to approach contingency planning. To be effective, it is essential that plans be especially tailored to the local institutional arrangements, abilities, TPR capability and demographic characteristics.

I. INTRODUCTION

A. Context

In preparing transit, paratransit, and ridesharing strategies for dealing with the energy environment of the coming decade, it is important to consider the context within which we are likely to be functioning. In all likelihood, it will be necessary to cope with periodic fuel shortages of different severity and duration, while the price of gasoline continually climbs in real (as well as inflated) dollars. During these shortages, there will be tremendous pressure upon government to help ease the situation. At the same time, military security and balance of payments considerations will continue to create pressures to further reduce petroleum consumption. The ability of government at all levels to help citizens cope with these situations will depend upon the existence of well thought out transportation contingency plans, which anticipate the different kinds of problems that may occur and which provide ready responses to deal with these problems.

In this context, transportation energy contingency planning is of great importance. The purpose of this report is to help state, regional and local officials develop a basic component of such contingency plans; namely, the preparation of various transportation options. This report seeks to provide some perspective on the overall transportation contingency planning process, with particular focus on transit, paratransit, and ridesharing initiatives. A synopsis of the kinds of actions various actors should consider taking during shortages is included in Part II.

B. Objectives of Contingency Planning

In both 1973 and 1979, the nation was disrupted by a reduction in fuel supplies. In neither case was the nation prepared for the event. Instead, federal, state, and local governments generally "muddled through" the situation with a variety of ad hoc attempts to ease the problems that occurred.

It is likely that shortages will recur over the next decade, and the public will expect better coordinated responses to these shortages. Consequently, it is necessary to think through the kinds of pressures that gasoline shortages will create and the kinds of efforts that federal, state, and local governments can undertake to deal with the fundamental problems of energy in America.

Acute fuel supply crises, together with continuing rises in energy prices, are in some ways not the problem. Rather, they are symptoms of the underlying problem of excessive dependence upon imported oil. At the same time, these "symptoms" are so disruptive to society (at times threatening stability and public safety) that they must be dealt with effectively. The objective of contingency planning, therefore, is twofold: first, to ease short-term crises and help people cope with the problems generated by such situations, and secondly, to do so in a manner which helps to solve the long-term problem of reducing the nation's demand for fuel. Actions which satisfy both objectives are the most desirable contingency actions. Actions which ease a crisis situation but do nothing to permanently reduce demand may be useful as part of a crisis strategy, but unless they are accompanied by longer-range conservation strategies the crisis will simply recur. In addition, the public's tolerance of shortages will diminish with each successive crisis

because of a feeling that the problem "should have been resolved." Actions which reduce demand in the long-run but do nothing to ease short run problems are not necessarily useful in contingency situations; if they appear to make an immediate crisis harsher, introducing them during a crisis may actually be counterproductive.

C. The Interrelationship of Energy Contingency and Conservation Planning

Conservation planning is generally thought of as long-range initiatives to encourage behavior which results in the consumption of less energy, while contingency planning is usually considered to be actions implemented quickly in response to an unexpected but possible emergency situation. In the energy context of the 1980s, conservation and contingency planning are so interwoven that the two must occur as part of the same process. The options available to government during a crisis are likely to be much broader if conservation strategies which can be expanded in a crisis have already been implemented. Conversely, the options for response to a crisis will be quite limited if prior conservation planning has not taken place. While the public response to aggressive and costly conservation strategies during unstressed times is likely to be disappointing, the public is likely to oversubscribe to whatever conservation initiatives are present once a shortfall occurs. If this aspect of the situation has been anticipated, significant new adherents to permanent conservation practices can be won during a crisis. Thus, it is largely true that the best contingency plan is to have in place an aggressive conservation strategy, and the best conservation plan is to have an effective contingency strategy.

The rationale for coupling the two strategies is further reinforced by the current direction of national policy. The President has established a policy of reduced imports of foreign oil, to be enforced by quotas. Given past trends of American consumption, this policy indicates an immediate need for energy conservation programs. This policy also implies that we should expect shortages of gasoline from time to time as perturbations in the demand for gasoline exceed mandated decreases in our energy supplies. Over and above these periodic shortfalls, variations in our energy supplies that result from foreign events may continue to disrupt markets and create shortages that are much more severe than the aforementioned perturbations.

This situation requires a conservation/contingency program which lays out an ongoing set of conservation strategies designed to reduce consumption over some time period by amounts consistent with an anticipated policy of continually reducing imports of petroleum. In addition, it is necessary to anticipate periodic and probably brief local shortages of the type experienced in 1979 which arise from place to place in the country as perturbations in demand or allocations occur. Such a conservation/contingency strategy should anticipate such shortages and include actions prepared both to deal immediately with such problems and to capture as much permanent conservation behavior as feasible from each such occurrence.

We must recognize the probability that during the next 10 years foreign events beyond our control may disrupt the supply of petroleum over and above any shortages which occur from our own planned action to reduce oil imports. This will result in shortfalls likely to be national, more severe and longer than the above mentioned variety, making it necessary to anticipate what further stresses such occurrences might cause; contingency actions must be ready to deal with these situations as well.

It is important to note that while both the 1973-74 and the 1979 shortages were relatively minor, they had profound impacts on the nation's economy and lifestyle. Thus, though we do not yet fully comprehend the implications of major longer-term shortfalls, we must be prepared to deal with them.

To be adequately prepared for the energy climate of the 1980s, all levels of government need to prepare a variety of conservation and contingency strategies that can be employed as necessary in response to a wide variety of energy supply scenarios. While the Emergency Energy Conservation Act of 1979 focuses on state government, the development of contingency strategies must involve close cooperation among "action" agencies at all levels of government. "Paper" plans, which have not involved the institutions from whom action is required, will not work. In fact, inconsistent actions by different levels of government will increase confusion and anxiety when a major reason for the plans is to reduce confusion and anxiety.

D. Decisionmaking Environment During Energy Shortages

Good anticipation of public reaction is a critical element in contingency planning. Under the conditions which prevail during petroleum shortages, many of the finer points of public policy become overwhelmed by the necessity for a clear governmental presence, perceived as "helping" the situation in order to maintain reasonable public order. Moreover, the benefits and costs assigned to various actions during unstressed times may bear little resemblance to the benefit and cost consequences of the same actions during an extreme shortage. This situation makes contingency planning very difficult to analyze in traditional terms. Situations are likely where "sticks" are easily the most cost-effective actions, while much less cost-effective "carrots" are the only politically feasible incentives. Many of the actions taken during a crisis

may be made more for their symbolic impact on people's general behavior than for their specific effect on energy consumption. Actions which theoretically are useful in easing the long-range conservation problem may not be feasible if they appear to collide with a need to help people cope in the short term. In short, the selection of successful contingency plans which help to maintain public order during crises and encourage permanent energy conservation is likely to depend upon good political judgement as much as good technical information.

E. Institutional Roles

During stressed times, people will not distinguish among the various levels of government. Every institution will be under pressure to perform in a helpful way. It is particularly important that the various institutions reinforce each other to enhance a climate of stability. Local institutional arrangements will, of course, affect the responses from states and their governors and legislatures, city governments and their mayors, transportation commissions, county governments, regional entities, transit authorities, and private businesses. This report will aid all contingency planners in their understanding of the situation, their roles in it, and the options that are likely to be available to them.

Specific actions needed to prepare TPR initiatives to deal with existing needs and anticipated problems will in most cases be focussed at local and/or regional levels of government. The role of states will be concentrated on developing and implementing overall contingency and conservation plans. In carrying out this responsibility, states must formulate a broad multifaceted program that will minimize the negative impacts of future energy shortfalls.

The identification of clear authority to react to an emergency is essential to a state's ability to respond effectively to such a crisis situation. This authority usually resides with the Governor who, for example, can adjust funding priorities as well as direct the use of state petroleum set-asides for emergency and essential purposes.

F. Products of the Contingency Planning Process

Three principal products should emerge from the contingency planning process. First is the process itself. The interaction among many levels of government and many different private institutions can be expected to generate some conflict over roles, responsibility and financing. This conflict should be anticipated and dealt with before energy shortages occur to avoid confusion over who is responsible for what activities. Secondly, the process should lead to ongoing working relationships among the various levels of government, private businesses, and other institutions that are necessary for implementation of contingency strategies. These relationships will be important during a crisis because specific actions agreed to in advance may need to be altered in order to deal with new and unexpected situations.

Thirdly, of course, the process should produce contingency plans and implementation strategies that are designed to cover expected conservation needs as well as several different types of possible shortages; for example:

- o expected supply reductions over a long period of time;
- o a local, three-week long, 8 percent to 12 percent order-of-magnitude shortfall resulting from a local perturbation in demand or allocation;

- o a national, six-month long 8 percent to 12 percent order-of-magnitude shortfall that results from an international event;
- o a more severe 12 percent to 20 percent type of shortfall; and,
- o a shortfall over 20 percent accompanied by rationing.

All relevant actors need to know what actions they must take under these various contingencies, what actions they can rely upon others to take, how their actions will be financed, where their trained personnel will come from, and what the limits of their effectiveness will be so that others in the process can realistically rely on them. This information should be specific enough to serve as a basis for estimating real potential of transit, paratransit, and ridesharing as well as the costs of providing this potential. In short, the "plans" should clearly delineate implementation responsibilities, expected results, and appropriate timetables.

G. Role of Transit/Paratransit and Ridesharing

Transit/paratransit and ridesharing (TPR) strategies are only one element among several which should be employed in an energy contingency/conservation program. It is true that in easily measurable terms, such as gasoline demand reduction, TPR may seem less significant than other elements. Its importance, however, is understated by that yardstick. In an energy shortage the issue is not how to save petroleum -- petroleum is "saved" by definition -- the questions are how to cope as effectively as possible given the petroleum available, and how to retain as much as possible of the conservation-oriented behavior after the shortfall passes so that the disruption will not recur. The availability of effective TPR options will be fundamental to the success of many other contingency plans which may be implemented. Moreover, the existence of these

options will greatly facilitate the conversion of short-term crisis behavior into longer-term conservation behavior. TPR strategies also maintain mobility, while minimizing the use of petroleum. Over and above these reasons, however, one of the major objectives during energy shortfalls is the maintenance of public order. Many contingency provisions such as sticker plans, odd-even or minimum purchase requirements, or gasoline rationing, involve negative, almost punitive responses. TPR options are almost alone among the strategies which appear to citizens as a positive action that government has mobilized to help cope with a frustrating situation. For this reason they have an importance beyond their direct role in reducing energy consumption, and they are worth a serious commitment to advance planning as part of the overall contingency planning effort.

II. CONTINGENCY PLANNING AT THE STATE LEVEL

This section describes the environment likely to characterize energy conservation and contingency planning pursuant to the preparation of state energy contingency strategies. It presents some ideas regarding who will be important in the state's planning and discusses the need for formal mechanisms to integrate statewide contingency and conservation planning with specialized TPR efforts within individual regions of the state. Finally, particular policy and program areas are suggested where state involvement could best facilitate local contingency preparedness activities.

A. The State Response

At the State level, there are several kinds of actions that may be taken in energy planning. These actions are:

o Conservation planning

1. intended to encourage fuel conservation behavior through incentives available to the State (e.g., advice on efficient driving habits, obeying speed limits, proper tire pressure).

o Contingency planning

1. to reduce "panic buying" created by artificial demand (e.g., minimum purchase plans, odd-even plans,
2. to restrain demand for fuel and minimize serious problems at the gasoline pump by restricting mobility (e.g., Sunday driving bans, sticker plans, parking prohibitions)
3. to provide programs to ease problems caused by actual shortages of fuel, while maintaining as much mobility as possible (e.g., increased transit, paratransit, and ridesharing).

Since the State will be dividing its attention among many possible initiatives within these actions, it is clear that TPR initiatives (under Congingency Type #3 above) will have to share attention with other contingency planning activities at the State level. In addition, many TPR initiatives are most logically planned and implemented at the metropolitan or sub-state level. At the same time, the successful implementation of TPR initiatives will require state support and may be facilitated by state executive and/or legislative actions. A major concern at the state level, therefore, should be the development of an effective interface between the metropolitan and State levels.

An example of the need for coordination is the frequent situation wherein State agencies directly provide planning and program support for ridesharing while metropolitan, city, or county entitites provide various transit and paratransit programs. This problem is further excerbated by the tendency of separate transit, paratransit, and ridesharing advocates to view other modes as competitors while they overstate the capability of their favorite mode and understate the potential of the others.

It is extremely important to set a tone of cooperation and coordination among the organizers, providers and advocates of transit, paratransit, and ridesharing. Functionally, in terms of the goal of reducing the demand for gasoline and dependence upon the single occupant vehicle, all three modes are important; the more plentiful and realistic alternative options there are, the more likely it is that an individual will choose to change to more energy efficient modes. That is, the relationship between TPR modes in terms of the goal of reduced gasoline consumption is symbiotic, not competitive. Politically, in terms of the rivalry between different levels of government,

citizens tend to ignore the distinctions among levels of government, particularly when they are unhappy. In the tense circumstances likely to characterize fuel supply shortages over the next decade, it is in the self-interest of all levels of government to make unusual efforts at cooperation to ease the situation.

To enhance coordination among various modes and levels of government, it will be extremely beneficial if the Governor designates one agency or individual at the state level to oversee the transportation contingency planning process. Because of its expertise in transportation matters, the state Department of Transportation (if it exists) may be the most appropriate organization to fulfill this function.

Local level coordination will also be necessary. A lead agency in each locality or region, therefore, should assume this role. Since most state governors have already assigned coordination responsibility for areawide transportation planning to Metropolitan Planning Organizations (MPO's), these agencies are likely to be the most appropriate lead agencies to coordinate TPR conservation/contingency planning programs.

B. Major Actors

There are numerous agencies and individuals that must be involved in the development of contingency activities. The Governor of each State usually has the authority to take a number of actions that can be essential to the success of contingency strategies. As pointed out earlier, the Governor frequently can adjust State funding priorities to better meet emergency needs as well as direct the use of State petroleum set-asides for emergency and essential purposes.

In most situations, several state agencies are likely to play important roles. The State Department of Transportation, or the highway agency, is likely to be the state agency most familiar with existing federal transportation programs, relevant efforts within the state, and the institutional relationships of relevant regional, city, and county actors. It is also likely to be the agency that provides some support to transit, paratransit, or ridesharing programs. The state Public Utility Commission is likely to have the most expertise on regulations which might be relaxed in emergencies. The State Energy Office is likely to have the best familiarity with fuel availability and distribution and probably controls the state fuel set-aside. This office may also have an overview of all energy-related problems and possible actions for reducing such problems. The State Department of Business and Commerce is likely to have the best ability to understand the effects of various plans on different sectors of the economy of the state. That agency is probably also best able to elicit both input and cooperation from affected businesses. The State Department of Education is likely to be the best source of information on the availability of school busses for non-school transportation, and often is involved in the funding of school bus service. The State Elderly, Human Service and Welfare agencies are in a position to evaluate the special needs of their clients during fuel shortages. The State Department of Administration will be central to the success of the efforts of many other state agencies, and in addition will likely be central to any in-house state fuel conservation and contingency plans. Depending upon local circumstances, other state agencies might also need to be involved in the state planning and implementation process.

In addition to state agencies, transit agencies, which are usually metropolitan-based entities but are often a county or city agency (and at times a department of the state), are central to any TPR component of an energy plan. County governments in some states and city governments in others are often transit providers or regulators of school buses, and taxicab service. Major employers and labor unions are important sources of information on the economic impacts of plans and will be particularly important in the implementation of TPR strategies. Private Transportation providers are the best source of information on current capacity problems and the potential for service expansion. Finally, new legislation and new funding may be required in many areas, leading to the participation of the State legislature.

The State should establish a mechanism to plan and implement a statewide energy conservation/contingency preparedness strategy. Depending upon each State's situation, this may involve a formal task force or a direct assignment of specific responsibilities. The particular problem to focus upon is that however the process is organized within a particular state, special attention should be given to the relationship between the overall state energy strategy and the TPR part of that strategy. As the lead agency at the state level, the State DOT or similar agency might be given responsibility for stimulating and participating in local and regional TPR efforts and integrating this information in an ongoing way with the state effort. By the same token, all the other relevant actors within the state should also pay special attention to how that relationship is structured, and should communicate these concerns to appropriate agencies or individuals to accomplish a well coordinated TPR strategy within the overall state energy contingency strategy.

C. Establishing State Policies and Programs

Policies established at the state level could have a major impact on both the nature and amount of TPR services that are available. There are also several statewide programs which could have similar effects. This section discusses a variety of policy issues and actions which might be considered during the state's contingency planning effort. In addition, the discussion of each issue includes suggestions regarding policy positions which a state might adopt to facilitate the expansion of various transportation services during an emergency. Finally, it should be noted again that resolution of some of these issues may require executive or legislative action (or both) at federal or state levels.

1. Fuel Supplies for TPR Services

During a shortage, operators of diesel-powered mass transit, intercity, school and charter buses who have bulk storage facilities may obtain 100 percent of their fuel requirements (either through their normal supplies or through the state set-aside program). Known as Special Rule #9 by the U.S. Department of Energy, this rule was recently extended by DOE for an indefinite period. Operators who do not have bulk storage facilities but who do operate the diesel-powered vehicles listed above must compete for fuel at retail pumps.

Gasoline-powered mass transportation vehicles, on the other hand, are in a different position if a shortage occurs. DOE's fuel allocation regulations provide that operators of gasoline-powered school buses, taxicabs, transit vehicles, intercity buses and vanpools who have bulk storage facilities generally may obtain 100 percent of the fuel which they used during a DOE defined "base period," which is currently November, 1977 through October, 1978. It should be emphasized that operators may obtain fuel according to the above formula, however, only if they have bulk storage facilities. It should also be noted that if their regular suppliers are short of fuel, these

operators may obtain their allocation through the state set-aside program. Operators who do not have bulk storage facilities must purchase fuel at retail pumps.*

States might undertake several actions to ensure that adequate fuel supplies are available to operators of public transportation services. Most importantly, states should continue to provide allotments from their emergency set-asides of gasoline and diesel fuel to operators who have bulk storage facilities but who are having difficulty finding suppliers to meet their fuel supply needs. In addition, states might develop programs and use their set-asides to provide fuel to public transportation services that theoretically have priority under the fuel allocation program but do not have bulk storage facilities. These services include vanpools as well as taxicab, school bus, intercity bus and mass transit operations. Programs which states might consider include:

- a. special hours or reserved gasoline pump islands at service stations which could be used to provide gasoline and/or diesel fuel to vanpools, taxicabs and other priority users.
- b. arrangements with taxicab companies (or other wholesale purchaser resellers of gasoline who have priority access to fuel) who would agree to sell fuel to vanpools, school buses, other taxicab

*It should be noted that all of DOE's fuel allocation regulations as well as gasoline price controls are scheduled to expire on September 30, 1981. As of this writing, it is unclear whether the allocation program will be extended beyond that date.

companies or other priority users of gasoline who do not have bulk storage facilities.

- c. arrangements with private employers who would agree to supply fuel to company-owned vanpools to implement this approach. The employer would have to ask DOE's Office of Hearings and Appeals for an increased allocation.
- d. use of state or city-owned facilities (e.g., highway departments or abandoned gas stations purchased by government agencies) to sell fuel to all types of priority users.

2. Expansion of Transit, Paratransit, and Ridesharing Services

Existing TPR programs may be inadequate to deal with the sudden new demand for public transportation that results from a fuel shortage. Consequently, states should consider a variety of actions that can facilitate expansions in the number and capacity of these services. States should also examine opportunities to stimulate the introduction of new kinds of public transportation services that fall under the general heading of "auxiliary/paratransit" operations.

Several actions which could be taken at the state level are listed below:

- a. Remove legal restrictions to the implementation of new transportation services by private carriers,
- b. Remove legal restrictions to the introduction of new paratransit services (e.g. permit use of school buses in non-school service, require shared-ride taxicab service throughout the state),

- c. Develop a series of park-and-ride lots throughout the state in cooperation with private carriers,
- d. Develop high occupancy vehicle lanes on appropriate state highways, and provide for preferential access for HOV's at ramps, and special rates on toll facilities,
- e. Encourage, or require, major employers to undertake transportation energy contingency /conservation programs (e.g., carpooling and vanpooling programs, subscription bus services, distribution and/or subsidization of transit passes),
- f. Develop a program to provide technical assistance to employers or local communities who are implementing transportation energy contingency/conservation programs,
- g. Develop a vanpool program, in cooperation with interested local governments to assure the capability of providing technical information and support on a large scale,
- h. Provide statutory and financial support for transit system expansion,
- i. Review the capability for response by existing carpool and vanpool support programs, and supplement them to assure adequate capacity to support the increased interest likely to occur during crisis situations.

3. Statewide Public Information Campaign

Fuel shortages cause confusion, anger and uncertainty in society. Of the many actions that a state can take to respond to these problems, a public information campaign is undoubtedly one of the most important. For maximum

effectiveness, such a campaign needs to be carefully planned and prepared in advance.

State-sponsored public information campaigns have traditionally focused on fuel savings that can be achieved through such items as (1) compliance with the nation's 55 mph speed limit; (2) regular automobile tune-ups and (3) maintenance of recommended automobile tire pressures.

In addition, information regarding TPR services should be made a part of the public information campaign which is used during future emergencies. The inability to handle telephone requests for information, in particular, has been a major problem in shortfall experiences. Consequently, a program should be developed to inform the public of the steps which have been taken to expand public transportation services during the energy emergency. It may be useful to promote all local transportation activities through a public information campaign. All of these actions will help to minimize public fears and will demonstrate that government is doing something positive in response to a fuel shortage. Depending upon local circumstances, the public information program may be one statewide program, or a multifaceted approach of coordinated state and local efforts. The state should take the responsibility to assure the program is adequately coordinated and comprehensive.

4. State Government Plan

The more than three million state government employees in this country now constitute approximately 20 percent of the public employee work force. A transportation energy contingency plan designed specifically for state employees could serve as a clear illustration of each state's interest in reducing fuel consumption and preparing for fuel emergencies.

A state government transportation energy contingency plan might include any or all of the following actions:

- a. a state-sponsored carpool matching program;
- b. state sponsorship of a vanpool program;
- c. variable work hours programs;
- d. use of state-owned vehicles for carpooling;
- e. state sponsorship of bus service to and from state government work sites;
- f. public information and marketing activities;
- g. state government distribution of transit passes (perhaps partially subsidized by the state);
- h. preferential parking for high-occupancy vehicles at state-owned parking lots.

One state agency, probably the state Department of Transportation, should be given a lead role in preparing the state government transportation energy conservation/contingency plan. Possible components of such plans might be discussed with other actors in the state process as well. However, because the plan will probably have to be implemented by the State Department of Administration, it must be developed with the close participation of that agency.

5. Funding for Public Transportation Services

Public transportation is often considered as a safety valve to deal with energy shortfalls. In fact, the provision of extra capacity in a fuel shortage will cost money to provide, usually more money than will be generated by added riders during a crisis.

Some specific funding issues which will probably surface during the contingency planning process include:

- a. Increases in federal, state, and local operating subsidies to expand existing public transportation services as well as to provide for increased maintenance, personnel, driver trainees, and drivers;
- b. The availability of capital to replace vehicles and other equipment as well as purchase new facilities (e.g., fuel storage tanks);
- c. Funding for new kinds of transportation services (e.g., the public use of school buses, vanpool programs);
- d. Emergency uses of transportation funds provided by federal agencies such as HEW, EPA, and DOE; and
- e. Funding of emergency response actions that are focused on state employees.

In responding to these issues, the appropriate agency may need to seek new funding from a number of federal, state, and local sources. The better prepared local contingency plans are, the more convincing will be the case to justify increased funding from whatever source is appropriate. At the same time it is obvious that the issue of funding is likely to be a constraint to the effectiveness of local response. (This might result in the creation of a resource constrained plan that can be expanded if additional funding becomes available. Funding problems are likely to vary considerably among different sized metropolitan areas and different levels of public transport orientation.) At present there is not a good measure of the size of the

problem. After an effective contingency planning process has been completed, a minimum of further analysis should indicate what order of magnitude of money is needed, the value of self-financing initiatives, and the incremental benefits that can be achieved if additional subsidies are available.

III. CONTINGENCY PLANNING AT THE REGIONAL AND LOCAL LEVEL

In June 1979, the U.S. Department of Transportation published a document titled "Transportation Energy Contingency Planning: Local Experiences." This publication was followed in September 1979, by the American Public Transit Association's (APTA) distribution of a report entitled "Approaches to Energy Contingency Planning." These two documents are sources for many of the ideas which are presented in this section.

The following paragraphs discuss the major participants that should be considered as part of the local contingency planning efforts and the second half of the chapter briefly describes a suggested process for development of a local contingency plan.

A. Lead Agencies at the Local Level for Developing TPR Programs

Strong and comprehensive local TPR contingency plans should form the core of a statewide contingency plan. To ensure that contingency planning in the TPR sector is comprehensive and coordinated with statewide contingency efforts, it is important that one organization in each region or metropolitan area of the state be the entity responsible for plan preparation and coordination and for assuring that the efforts are integrated into the overall statewide effort. Most governors have already designated metropolitan planning organizations (MPO's) in each metropolitan area to implement both DOT and Environmental Protection Agency (EPA) transportation planning requirements. Since it is essential that DOT, EPA and transportation energy planning programs be fully coordinated at the metropolitan level, these agencies will most likely be appropriate for energy contingency planning as well.

The lead agency in each region will have to complete two key tasks. Organization and coordination of the local contingency planning process should be the first task. Toward this end, the lead agency will have to ensure that all relevant organizations are included in the local contingency planning process. These organizations are likely to include:

1. Transit authorities
2. Operators of area-wide carpool and vanpool programs
3. "Providers" of paratransit services, including
 - a. Dial-a-ride, subscription bus and jitney operators
 - b. Taxicab companies
 - c. School bus companies
 - d. Private and charter bus operators
 - e. Human service agencies
4. Regional, county, city, and town governments, and some representative(s) of state government
5. Major employers in the region
6. Generalized employer and labor organizations (Chamber of Commerce, Central Labor Council)
7. Major fuel suppliers for the region
8. State agencies (DOT, DOE, Human Service, Education) which might have a role to play.

The lead agency may have to educate some of these participants as to the roles which they may play in responding to another fuel shortage. In addition, efforts will probably have to be made by the lead agency to guarantee that participants carry out their responsibilities in a comprehensive manner. Negotiations which are required to eliminate

overlapping or conflicting activities may have to be chaired by the lead agency. Eventually, the lead agency should probably be responsible for the actual writing of an overall local TPR contingency plan which includes actions which will be taken by all of the above listed organizations.

A second task for some lead agencies (except where a directly participating state actor has this responsibility) will involve liaison activities between local contingency planners and state officials who are developing statewide responses to future energy emergencies. In this capacity, the lead agency should keep state officials informed of the progress of local contingency planning programs. Actions which local contingency planners are considering and which would require action by state agencies or the state legislature should be discussed with appropriate state officials. These discussions might also cover the need for federal action to remove barriers to effective emergency actions. Proposed state level contingency measures should be relayed to local organizations through the lead agency.

Consultation, negotiation, and decisionmaking should be the backbone of the lead agency's efforts. In cases where the lead agency lacks adequate authority it must bring the issue to the appropriate level for decision. Finally, the lead agency needs to ensure that actions are taken to implement the plan. The critical point is not who performs each function, but that each function be performed.

B. Major Actors

There are numerous agencies and individuals that should be involved in the preparation of a comprehensive local contingency plan. As discussed in the preceding paragraph, most of these organizations will prepare their own

contingency plans, but these plans should be fully coordinated with the overall planning effort.

1. Transit Operator

The local transit operator will have to play a key role in each region's contingency planning process. The general public is likely to feel that mass transit is available as a fallback for their personal use when needed. Consequently, citizens will look increasingly to mass transit services for their travel needs as fuel prices increase and fuel shortages occur.

The transit operator will have to devise methods of responding to repeated fuel shortages, which will no doubt result in surges in demand. Initially, transit operators may fear that shortages will cause increased vehicle breakdowns, reduced schedule reliability, overloading on transit vehicles, increased operating costs and alienation of those riders who have traditionally relied on public transportation for their mobility. The transit operator may also perceive that these problems will undoubtedly anger new transit riders who have been forced out of their cars by the onset of another energy emergency, as well as traditional patrons who suddenly experience new levels of crowding and delay.

Looked at another way, however, the likelihood of future fuel shortages may provide the transit operator with valuable new opportunities to serve. An opportunity exists to (1) prove to public officials that mass transit services deserve additional political and financial support because of their potential to reduce fuel consumption, (2) prove to the public that mass transit can provide inexpensive, reliable and attractive service during a fuel shortage,

and (3) convince new riders that they ought to continue their use of mass transit after the fuel shortage eases.

To take advantage of these opportunities, the transit operator should prepare an internal contingency plan which describes methods of maintaining and/or expanding transit services in response to fuel shortages and rising gasoline prices. Equally important, the transit system should take pains to integrate its contingency plan with contingency plans that are prepared by other organizations. Also, the transit operator should involve labor in the development of contingency plans. The labor unions are important sources of information on the economic impacts of the plans and will particularly important in the implementation of TPR strategies.

2. Providers and Regulators of Auxiliary Mass Transportation Services

Public transportation services need not be limited to publicly provided bus and rail mass transit service. In fact, there are numerous methods by which other types of vehicles and transportation operations could be integrated into a locality's contingency plan.

Shared-ride taxi service, for example, is currently prohibited in many cities and towns with the result that the passenger-carrying capacity of taxicabs is limited. If shared-ride taxi service were allowed, taxicab occupancy could be significantly increased. In addition, shared-ride taxis might be employed to provide "feeder" service to main line transit routes, thereby making public transportation services available to more people. Alternatively, shared-ride taxis could be used to provide service to individuals such as elderly, handicapped and low-income persons who will be particularly affected by a fuel shortage and/or rising fuel prices. Through

provision of user-side subsidies for taxicab usage by these persons, fares could be reduced to affordable levels.

School buses might also prove valuable during a fuel shortage. Although they have physical and mechanical limitations, these vehicles could be employed to provide park-and-ride services during a severe fuel shortage. They too could act as "feeders" to main line transit routes. They could also be employed as "buspools" to transport groups of workers from their homes and employment sites. Finally, school hours could be slightly modified and these vehicles could be employed as peak-hour, fixed-route transportation services.

Human service agency vehicles, privately owned charter buses, and even privately owned vans or cars (for jitney service) also could and should be part of transportation services that are developed and implemented in response to a fuel shortage. As is the case of taxicabs and school buses, however, use of these vehicles for new purposes may require state executive or legislative action. Proposals for such use may also stimulate extensive controversy. Nevertheless, the potential value of these vehicles in expanding the range of transportation options in a locality is so great that opportunities for their use should be given careful consideration. In this area, primary consideration should be given to the fact that handicapped and elderly people will very likely be particularly stressed during an energy shortfall, as public transportation becomes more crowded and taxicabs become less available. The human service transportation network, which may be the only supply of appropriate vehicles to serve these groups, needs special attention in this light.

3. Ridesharing Service Coordinators and Promoters

Carpooling services should be a basic component of every local transportation contingency plan. Moreover, these services must be prepared to accommodate a substantial increase in the number of requests for matching during an energy emergency.

Alternatively, if a state or metropolitan area does not already have a network of local carpooling services, the establishment of a state-sponsored and operated carpooling service is most important. If this is the case, the DOT and appropriate local agencies should evaluate the ways in which this service should be funded, operated, and marketed.

Vanpooling programs should also be included in local transportation contingency plans. They too could be implemented at the state or local level. If vanpooling programs have not already been established by the DOT or by local authorities, the DOT should institute such a program on a statewide basis. In addition, to reduce the time delay in acquiring vans, the state might consider acquiring a pool of vans so that employers could acquire vehicles without delay.

4. Major employers

Because of the concentration of travel to specific, unchanging destinations, worksites which have large numbers of employees have enormous potential as foci for contingency planning and energy conservation programs. For this reason, it might be useful for large employers (e.g., those with more than 100 employees at a worksite) to prepare their own conservation and contingency plans. "Employer-based" plans might include one or more of the following actions:

- a. an employer-sponsored carpool matching program or participation in an area-wide carpool program,
- b. employer sponsorship of a vanpool program,
- c. variable work hours programs,
- d. use of company-owned vehicles for carpooling,
- e. employer sponsorship of bus service to and from the worksite,
- f. public information and marketing activities,
- g. employer distribution of transit passes (perhaps partially subsidized by the employer),
- h. preferential parking for high-occupancy vehicles.

Not surprisingly, employers may require substantial amounts of technical assistance so that they can prepare adequate contingency plans. For example, they may need to be shown how to establish ridesharing services, sponsor transit pass programs or contract for bus service to their worksites. The state DOT or a local entity would be of invaluable technical assistance to employers if it prepared and distributed a package of technical assistance materials. These materials could include "how-to" manuals, computer matching programs for ridesharing services and ideas regarding the selling of the employer's contingency plan to employees. Each locality or the DOT could then use these materials in contingency planning discussions with employers.

The major employers should discuss the various actions which they are considering with their labor unions. The labor unions will be important sources of information on the economic impacts of the plans and will be particularly important in the implementation of TPR strategies.

5. Other Actors in the Process

County, regional, city, and town governments will be major participants in local contingency plans for actions that are taken in response to another energy emergency. Local leaders have the authority to institute certain programs (e.g., HOV lanes, parking restrictions, use of school buses, or changes in taxicab regulations) which can affect the quality of public transportation services that are provided during a fuel shortage.

It may also be useful to include regional fuel suppliers in a contingency planning program so that planners can be continually apprised of changes in the availability of fuel. Plans for the assignment of fuel to essential uses may also require discussions with regional fuel suppliers.

C. Preparing a Local Transportation Contingency Plan

There are a number of activities which should be pursued in order to prepare an effective contingency plan. A recommended list follows:

1. Assessment of the local and national impacts of the 1973-74 and 1979 fuel shortages on automobile travel and demand for public transportation services.
2. Analysis of current fuel supply conditions at the local level and development of procedures for monitoring changes in fuel supplies.
3. Analysis of existing services, vehicles and ridership to determine available capacity and fuel requirements, and to plan better use of existing services.
4. Analysis of the likely demand for multi-passenger transportation services (both its magnitude and location) which will be stimulated by future fuel shortages of varying severity.

5. Analysis and selection of actions which can increase the capacity of existing services.

6. Analysis and planning of new services which could be instituted in response to another fuel shortage.

7. Development of a fuel management plan which includes fuel conservation measures as well as steps to increase fuel supplies.

8. Coordination of the contingency plan with other plans that are prepared by mass transit, paratransit, ridesharing, or governmental organizations. (In particular, this coordination must communicate the limits of each organization's efforts, so that other entities clearly understand the boundaries of actions by individual agencies.)

9. Coordination of the plan with other ongoing local programs, most notably programs that have been undertaken to reduce air pollution and traffic congestion.

10. Integration of the plan with actions that the state and federal governments will take in response to fuel shortages.

11. Preparation of an implementation strategy for the plan, including assignments of responsibility and the timing of various actions.

12. Periodic updating of the plan.

To eliminate duplications of effort, it may be appropriate for the lead agency in each region to undertake certain general tasks which will benefit all participating organizations. For example, the lead agency might study the local and national impacts of past fuel shortages and formulate projections of the effects of possible future shortages, assume the responsibility for coordination of energy planning with ongoing clean air and congestion

reduction strategies, and coordinate work of the various localities with activities at the state level.

For every participating organization, the most difficult element of the planning process may be the analysis of alternative actions. To successfully analyze each action, a number of factors will have to be considered. Among these factors are:

1. Whether the action can be taken unilaterally or whether it requires the participation of other organizations.
2. Whether the action should be implemented only in a brief, relatively mild shortage or in a long-term (e.g., a one year or longer) severe fuel crisis.
3. The financial and other resources that will be required to implement the action.
4. The fuel savings, fuel demand reduction, or trip capacity increase that will result from the action.
5. The lead time that will be required to implement the action.
6. The political, social, institutional, and economic impacts of the action.
7. Whether actions that are taken by other organizations can promote the success of the action (e.g., employer introduction of variable work hours programs could help to spread the peak hours of travel on transit vehicles).

Eventually, each organization's proposed actions and plans will have to be packaged into an overall local contingency plan. In most regions, this task will be best accomplished by the lead agency. The plan should clearly establish actions that will be implemented locally or by individual

organizations. The plan should also itemize the total cost of the plan in comparison with the increase in multi-passenger transportation services which will result from implementation of the plan. The total amount of fuel consumption which can be offset by use of the plan should be estimated. The plan must discuss the likely political and social impacts of future fuel shortages and the ability of the plan's actions to minimize these impacts as well as the limits of the effectiveness of the plan. Finally, the plan should outline the relationship of proposed state and federal actions to local initiatives.

IV. INTEGRATING STATE AND LOCAL CONTINGENCY PLANNING EFFORTS

As previously indicated, transportation contingency planning should be undertaken simultaneously at both the state and local levels. Presumably, the state level planning effort will generate a series of statewide policies and actions which can be employed during future energy emergencies. On the local level, TPR contingency plans should be prepared which include both regional actions as well as initiatives by individual local organizations.

Development of the TPR component of an overall statewide contingency plan should include integration of local and regional contingency plans into the statewide contingency planning process. To complete this phase, the following four integration activities must be undertaken:

- o Provision of technical assistance to local contingency planning efforts
- o Integration of local plans with state actions
- o Writing and distribution of the state plan
- o Clarification of responsibility for implementation

A. Technical Assistance

The state can play a key role in providing guidelines and technical assistance to agencies undertaking local contingency planning efforts. This can include development of statewide information on fuel usage (by sector, mode, fuel type, etc.), on fuel allocation procedures and on appropriate regulatory requirements. In addition, information on useful analysis techniques, on projections of strategy impacts and other technical matters would provide a significant benefit to local planning activities.

B. Integration of Local Plans with State Actions

Integrating local plans with proposed state actions and emergency policies will be a related and perhaps more difficult task. If the state's emergency policies and actions are not established until local contingency planning has been nearly completed, elements of some local plans may conflict with the decisions of state officials. Alternatively, even if the state's policies are formulated early in the planning process, some local plans may not take advantage of these policies (e.g., a state might encourage the use of school buses in public transportation service but a locality might not develop plans for such use during another fuel shortage). There may also be questions regarding the timing of various local and state actions in the event of a future energy emergency. Resolving these problems will involve frequent communication between lead agencies at the local level and corresponding agencies at the state level.

C. Preparation and Distribution of the Draft Plan

A draft of the state contingency plan should be prepared and distributed as widely as possible. This plan should describe actions which will be taken on a statewide basis in response to another fuel shortage. It should include detailed descriptions of all local plans, and it should discuss the process by which these state and local programs will be implemented.

Circulation of the draft plan for comment is likely to be an extremely worthwhile part of the process. One region of the state might gain new insights from reading the contingency plans that are prepared by other regions. Unrecognized faults in state and local plans might also be identified. Ultimately, the comments that are generated from circulation of

the draft plan can be used to revise proposed state and local actions and prepare a final state contingency plan.

D. Clarification of Responsibility for Implementation

Responsibilities for implementation (as well as ongoing adjustment) must be clearly delineated. Moreover, one actor must be given responsibility for the dissemination of information and for the creation of linkages to assure coordination between Clean Air Act implementation, transportation system management, energy actions, and other overlapping responsibilities. This actor must have adequate power (or access to adequate power), to carry out assigned tasks. The designee will undoubtedly vary from state to state, and perhaps even from metropolitan area to metropolitan area, but the function is critical to effective action.

E. Final Notes

In closing this section, there are four points which all the actors in the state process as well as local contingency planners should keep in mind as they develop programs for energy conservation and responses to fuel shortages. First, while transit, paratransit, and ridesharing services may already exist in many localities, the presence of these services does not mean that a state or locality is prepared for an energy emergency. Existing staffing patterns, funding levels, and services are probably insufficient to meet a sharp increase in the demand for TPR services. Consequently, decisionmakers should be wary of assurances that existing programs and services can promptly and efficiently handle this new demand. If transportation contingency plans have already been prepared, decisionmakers

would do well to satisfy themselves that these plans are both comprehensive and likely to be successful in dealing with a significant demand for expanded services.

Second, the most important actors in every transportation contingency planning effort will be those agencies and individuals who can implement and operate transportation services during another fuel shortage. Participants in contingency planning, therefore, might best focus their attention on ensuring that these organizations and individuals participate to the maximum possible extent in state and local contingency planning efforts.

Third, it is important to emphasize that transportation contingency planning should not take place over a single concentrated period and then be put aside. On the contrary, the planning process will be effective only if it involves an active and continuing effort on the part of all parties at the state and local level. Consequently, it is highly desirable to periodically update state and local contingency plans to take into account recent changes in federal policies, state programs, and local transportation operations.

Finally, contingency planning should not be undertaken solely on the basis of "the old rules." Indeed, contingency planners will have to seek innovative solutions which may include the development of new kinds of transportation service, temporary suspensions of existing laws and regulations for the duration of the shortage, the creation of new institutional and political relationships at both state and local levels and reductions in "red tape." Hopefully, each participant in the process will welcome the opportunity to use new rules and will explore their potential to the fullest possible extent.