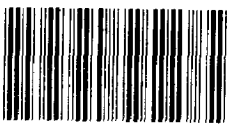
BY THE COMPTROLLER GENERAL

# Report To The Congress

OF THE UNITED STATES

# Transportation Contingency Plans For Future Gas Shortages Will Not Meet Commuter Needs





The disruption caused by gasoline shortages of the 1970s and the resulting problems commuters experienced pointed out the need to prepare for future shortages. The Department of Transportation has encouraged the development of transportation contingency plans at the local level to maintain commuter mobility during petroleum shortages.

Few urban areas, however, have prepared plans which would be very helpful. Further, progress in developing contingency plans has slowed down in many areas. New efforts are needed to spur areas to complete contingency plans and improve plans already developed so that all areas will be better prepared to respond to commuters' transportation needs, should they arise.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COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON D.C. 20548

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To the President of the Senate and the
Speaker of the House of Representatives

This report summarizes the results of our review of transportation contingency planning and discusses the need for new efforts to assure that all areas of the country will be adequately prepared to maintain mobility during gasoline shortages. The report contains matters for consideration by the Congress concerning the appropriate emphasis that should be given to the preparation of transportation contingency plans and makes recommendations to the Secretary of Transportation to expedite and improve contingency planning.

Copies of this report are being sent to the Director, Office of Management and Budget; the Secretary of Transportation; the Secretary of Energy; interested congressional committees; and other parties.

Milton J. Socolar

Acting Comptroller General
of the United States

COMPTROLLER GENERAL'S REPORT TO THE CONGRESS

# TRANSPORTATION CONTINGENCY PLANS FOR FUTURE GAS SHORTAGES WILL NOT MEET COMMUTER NEEDS

## D I G E S T

The two gasoline shortages experienced in the 1970s have shown the vulnerability of the United States to disruptions in its petroleum supply sources. In addition, the transportation disruptions caused by these relatively minor shortages illustrate the need to develop transportation contingency plans to help people maintain their mobility in the event of future shortages. GAO found that few areas have completed such plans, and progress in contingency plan development has been slowing down since the 1979 shortages. Action by both the Congress and the Department of Transportation is needed to ensure that areas will be ready to take action if another gasoline crisis occurs.

## WHAT IS CONTINGENCY PLANNING?

Regional contingency plans, if all agencies and organizations that provide transportation services or affect urban transportation systems are involved in their development, can help people identify and adopt alternative travel modes. This will enable them to meet their essential transportation needs with the amount of gasoline available and minimize the disruptions caused by gasoline shortages. (See p. 1.)

Contingency strategies in these plans can range from low-cost, quick-response actions to more costly alternatives to deal with severe shortages. While the contingency plans must be designed to meet unique local conditions, in general they include actions to (1) inform people about and tell them how to use alternatives to driving alone in a private automobile, (2) increase the capacity of mass transit systems by adjusting existing service to carry more riders with available equipment or adding additional personnel and equipment, such as school buses or retired transit buses that have been held in reserve, (3) increase ridesharing by promotional activities and assistance to individuals in locating and forming carpools, and (4) encourage adoption of alternative work hour programs that could reduce or spread the peak hour demand for mass transit services and also facilitate ridesharing. (See p. 1.)

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## FEW AREAS HAVE DEVELOPED REGIONAL CONTINGENCY PLANS

While there is no legislative or regulatory requirement for preparing contingency plans, early in 1979 the Department of Transportation began to encourage States and metropolitan transportation planning organizations to develop contingency plans. This was done as part of the Department's ongoing efforts to improve metropolitan transportation planning. (See pp. 2 to 5.)

In 1980 GAO reviewed the development of contingency plans in 7 urbanized areas--5 (Chicago, Illinois; Los Angeles, California; Washington, D.C.; Baltimore, Maryland; and Seattle, Washington) of the 25 urbanized areas in the country with more than a million in population, and 2 (Portland and Eugene, Oregon) of the smaller urbanized areas with populations ranging from 50,000 to 999,999. GAO also collected information on the status of contingency plan preparation in 21 other urbanized areas. (See p. 7.) Only 2--Los Angeles and Washington, D.C.--of the 7 urbanized areas reviewed in detail and 1 of the 21 urbanized areas surveyed had completed a regional contingency plan. (See pp. 11 to 12.)

While the metropolitan planning organizations in the other urbanized areas had scheduled contingency planning activities for fiscal year 1981, progress has been slow. (See pp. 11 to 12.) Part of this lack of progress results from diminished interest in contingency plan development after the gasoline supply shortages disappeared because there is no perceived threat of another imminent crisis. As a result, local areas have directed their limited planning resources to other, more immediate problems. (See p. 13.)

In addition, planners have indicated that the following factors have also contributed to delays in regional contingency plan development: (1) lack of specific Department of Transportation guidance for preparing regional contingency plans, (2) lack of information about possible Federal and State actions in the event of another gasoline shortage, and (3) confusion about the relationship of these contingency plans with State emergency energy conservation plans required under the Emergency Energy Conservation Act of 1979. (See pp. 13 to 16.)

## MANY AREAS HAVE ONLY LIMITED CONTINGENCY PLANS

Because even the small shift to mass transit that occurred during the 1973-74 gasoline shortage had a big impact on the transit systems, particularly during the peak commuting hours, transit systems began preparing energy contingency plans very early. (See p. 5.) GAO found that transit system operators in six of the seven urbanized areas reviewed in detail had completed contingency plans by August 1979. (See pp. 16 to 17.)

These contingency plans will have limited impact, however, because transit systems, most of which already operate at capacity during peak rush hour periods, carry only a small percentage of an area's commuters, and equipment and personnel limitations restrict increases in transit system capacity. (See pp. 17 to 18.)

In addition, transit contingency actions are limited to those actions which transit systems have the authority to implement. While many of the transit plans reviewed include actions--such as employer flexitime programs and use of school buses--that would allow the transit system to carry more people, the cooperation of other organizations is needed for implementation. Transit system operators have not been able to develop strategies to achieve this cooperation so that the actions will be implemented when a crisis occurs. (See pp. 18 to 21.)

A regional approach to contingency planning that involves all the essential groups could develop the cooperation needed for implementation.

## UNRESOLVED OBSTACLES WILL HAMPER IMPLEMENTATION OF SOME PLANNED ACTIONS

GAO found unresolved obstacles in the contingency plans prepared by both regional planning organizations and transit system operators that will delay or prevent implementation of planned actions. These obstacles include: (1) inadequate preparatory work for planned actions such as alternative work hour programs and ridesharing programs (see pp. 22 to 25), (2) problems with acquiring, maintaining, and activating a reserve bus fleet (see pp. 25 to 27), (3) conflicts between planned actions and labor agreement provisions (see p. 27), and (4) lack of funding for contingency actions (see pp. 27

to 28.) Unless the obstacles and deficiencies are corrected, even those areas with a contingency plan will be unable to help people maintain mobility during another gasoline shortage.

The Department of Transportation's review of an urbanized area's planning is directed at determining whether the planning process meets regulatory requirements rather than evaluating the plans themselves. While regional Department of Transportation personnel have indicated that they will review and comment on the contingency plans, they had not done so by the end of 1980, and they do not have any uniform criteria to follow in carrying out the review. (See pp. 21 to 22.) Because the contingency plans had not been reviewed, the Department had not identified the problems GAO found and had not initiated action to resolve them. After identifying these problems, action should be taken to ensure that planners still working on contingency plans would avoid including similar problems in their plans.

## MATTERS FOR CONSIDERATION BY THE CONGRESS

To overcome the resistance to contingency planning at the local level, GAO believes congressional action is needed to support the need for such planning. There is a range of actions that could be taken.

--Support the Department's efforts with explicit expression of the Congress' interest in regional contingency plan development by actions such as passing a congressional resolution or conducting oversight hearings.

--Make funding specifically available to communities or regions for preparing contingency plans and for preparing to implement them.

--Require an approved contingency plan as a condition for receiving any Federal transportation assistance. (See p. 29.)

## RECOMMENDATIONS

To eliminate the obstacles that are delaying contingency plan development, expedite the preparation of workable strategies, and correct deficiencies in existing plans, GAO recommends that the Secretary of Transportation

--work with the Department of Energy to develop specific information on potential shortfalls

of petroleum supplies and the impact of this on availability of gasoline to motorists, and provide more information to planners on the ranges of shortfalls for which they should be developing contingency actions and the Federal actions that could be expected for given shortages;

--develop specific criteria on what contingency plans should contain, what types of strategies are appropriate for each level of energy shortfall, and the acceptable periods of time needed to implement contingency actions;

--provide guidance on the relationship between regional contingency plans and State emergency energy conservation plans; and

--establish a required review process for all contingency plans developed using Department of Transportation funding and develop procedures to inform metropolitan planning organizations of inadequacies in and assist them in correcting their planned strategies. (See pp. 29 to 30.)

AGENCY COMMENTS AND GAO's EVALUATION

The Secretaries of Transportation and Energy were given an opportunity to review this report and their comments are included in appendixes II and III, respectively. The Department of Energy agreed with GAO's conclusions and recommendations. (See p. 30.) Except for the recommendations dealing with providing additional information on potential gasoline shortages and the need for coordination, the Department of Transportation disagreed with GAO's suggestions for consideration by the Congress and the recommendations. It believes a prescriptive Federal involvement would be counterproductive and local agencies should have greater discretion in their use of Federal funds to fit the values, conditions, and institutions in the jurisdictions involved.

GAO continues to believe the actions suggested have the potential to provide the incentive needed to overcome the resistance to contingency planning and that the recommended changes are needed to expedite the development of workable contingency plans. (See pp. 31 to 33.)

Comments received from two metropolitan planning organizations and four transit operators generally consisted of clarifications of data presented in the report and additional information on activities since the completion of the review. The report has been revised to reflect these comments. (See p. 30.)

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## ABBREVIATIONS

| | |
|---|---|
| DOE | Department of Energy |
| DOT | Department of Transportation |
| EECA | Emergency Energy Conservation Act |
| FHWA | Federal Highway Administration |
| GAO | General Accounting Office |
| GSA | General Services Administration |
| MPO | Metropolitan planning organization |
| TSM | Transportation system management |
| UMTA | Urban Mass Transportation Administration |

# CHAPTER 1

## INTRODUCTION

The two gasoline shortages the United States experienced in the 1970s revealed our vulnerability to foreign sources of petroleum and illustrated the need to prepare for future shortages. Transportation energy contingency planning (hereafter referred to as contingency planning) is one attempt to do this by helping people meet their mobility needs while coping with reduced gasoline availability and higher prices. While a contingency plan will not solve all the problems caused by gasoline shortages, if local governments are prepared to help people identify and adopt alternative travel methods, they can minimize the disruption caused by gasoline shortages, help people meet their essential mobility needs, and ensure that no one suffers an unfair share of the burden. During the previous disruptions most areas did not have comprehensive contingency plans, and government could do little to lessen the impact. The United States was able to "muddle through" because individuals took independent actions to manage with the amount of gasoline available to them.

Contingency plans are generally thought of as low-cost actions that can be taken quickly to respond to an emergency. To deal with severe shortages, however, contingency plans may include more costly alternatives that would take longer to implement. Effective contingency planning to maintain mobility during gasoline shortages will require a comprehensive regional approach involving all agencies and organizations that provide transportation services or affect the transportation system. These include mass transit operators, paratransit service operators, rideshare coordinators, major employers, and local governments. While each organization or agency can design contingency strategies to improve its own operations, many contingency actions cannot be effectively planned or implemented without the interaction of several organizations.

Contingency plans must be designed to meet unique local conditions, but potential contingency strategies include:

1. Actions to facilitate or increase mass transit ridership, such as

   --campaigns promoting the benefits of using transit by informing the public about changes in services resulting from the gasoline shortage, and providing service and route information to potential riders who have not used transit before;

--adjusting service routes to accommodate ridership increases, running two buses together serving alternate stops on bus routes, reassigning buses from low-demand routes to high-demand routes, or establishing park-and-ride lots; and

--increasing system capacity by adding buses from a reserve fleet of old buses or by using school buses.

2. Actions to increase ridesharing, such as

--encouraging carpooling or vanpooling through promotional campaigns,

--involving major employers in rideshare promotion and programs to help their employees find and form carpools,

--establishing park-and-pool lots,

--increasing the capacity of the rideshare matching operation by adding personnel or obtaining additional computer services, and

--establishing priority lanes on highways and bridges for rideshare vehicles.

3. Actions to adopt alternate work hour programs, such as flexitime or staggered work hours, to facilitate transit use or carpooling.

In addition to these contingency plans addressing local mobility issues, Federal and State governments are also planning for emergency energy conservation in case of future gasoline shortages. These plans include actions to manage gasoline distribution and reduce gasoline consumption--establishing State fuel consumption targets, imposing gasoline rationing, requiring minimum gasoline purchases, or imposing odd/even gasoline restrictions. During previous shortages, many areas did impose an odd/even plan to shorten gasoline lines.

## FEDERAL EFFORTS TO PROMOTE CONTINGENCY PLAN DEVELOPMENT

Contingency plans to help maintain mobility are not required either by legislation or regulations. While the first planning efforts were the result of local initiatives, since early in 1979

the Department of Transportation (DOT) has taken several steps to encourage urbanized areas 1/ to prepare regional contingency plans. These actions are part of DOT's efforts to improve and strengthen metropolitan transportation planning.

Both Federal highway and urban mass transit legislation require urbanized areas to establish a continuing, comprehensive transportation planning process. The joint Federal Highway Administration (FHWA) and Urban Mass Transportation Administration (UMTA) urban transportation planning regulations (23 CFR 450 and 49 CFR 613) issued under this authority require each urbanized area to develop a single transportation plan for highways and transit covering actions integrating automobiles, public transit, taxis, pedestrians, and bicycles. This transportation plan must have a short-range transportation system management (TSM) 2/ component to identify improvements to achieve more efficient use of existing transportation facilities and a long-range component to identify new transportation policies and facilities or major changes in existing facilities. Transportation planning must be done as a regional process, and the regulations assign responsibility for developing the urbanized area's plan to the metropolitan planning organization (MPO) 3/ in cooperation with the State and operators of publicly owned mass transportation services.

The transportation planning regulations list the elements that must be addressed in the planning process and specify the development annually of a unified planning work program (hereafter referred to as work program) describing all the urban transportation and transportation-related planning activities anticipated for the next 1- or 2-year period. In 1979 the elements of the planning process did not specifically mention contingency planning.

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1/"Urbanized area" is the Bureau of Census designation for a city of 50,000 or more population plus the surrounding urban fringe.

2/We issued a report on problems with DOT's TSM program, "Stronger Federal Direction Needed To Promote Better Use of Present Urban Transportation Systems" (CED-79-126), on Oct. 4, 1979.

3/MPO is the organization designated by the Governor, in agreement with local governments, as responsible for carrying out the requirements of the transportation planning regulations. It is intended to be a forum for cooperative decisionmaking by principal elected officials of general-purpose local governments.

FHWA and UMTA are required to annually review each urbanized area's planning process and certify that it meets the regulatory planning requirements; FHWA and UMTA do not formally review and approve the actual plans. Unless their planning process is certified, urbanized areas are not eligible to receive UMTA and FHWA capital and operating assistance. UMTA and FHWA provide financial assistance to support portions of the planning process.

DOT began encouraging the development of contingency plans with a March 29, 1979, joint UMTA/FHWA memorandum to their respective regional offices. This memorandum pointed out the vulnerability of the transportation system to gasoline shortages and asked the regional office staffs to (1) promote regional contingency planning and (2) strongly recommend that each MPO include contingency plans in its work program.

The DOT push for contingency plans is continuing. A November 2, 1979, FHWA order outlining fiscal year 1980 national emphasis areas for FHWA staff includes encouraging and supporting State and local efforts to develop contingency plans as a specific objective. FHWA has continued contingency planning as a national emphasis area in fiscal year 1981. As a result, UMTA and FHWA regional staffs have continued to encourage preparing contingency plans in their contacts with MPOs concerning the development of each urbanized area's fiscal year 1981 work program, their review of the work program, and their certification review of each MPO's planning process.

The planning process element that requires technical activities to evaluate alternative TSM improvements and develop the TSM element of the transportation plan was revised on August 29, 1980, to add responding to short-term disruptions in the energy supply as a factor in the planning process. While this revision does not specifically require the development of a contingency plan since it is just one of the technical activities that must be an element of the planning process, it provides a basis for continuing the contingency planning efforts.

DOT also distributed information to help MPOs develop their contingency plans. Attached to the March 29, 1979, joint FHWA/UMTA memo were (1) a summary of issues which should be considered in developing contingency plans, (2) a summary of the North Central Texas Council of Governments contingency plan, and (3) a summary of how key issues had been addressed in several contingency plans prepared by transit operators. Regional office staffs, in informing the MPOs of the priority DOT was giving to contingency plan development, gave the MPOs this information.

In June 1979 DOT published a document, "Transportation Energy Contingency Planning: Local Experiences," which included excerpts from contingency plans from six areas (Memphis, Tennessee; Seattle, Washington; Los Angeles, California;

Washington, D.C.; Dallas-Ft. Worth, Texas; and Minneapolis-St. Paul, Minnesota) which other areas could use as a guide.

In July 1979 DOT also sponsored five seminars on contingency plan preparation in Dallas, Los Angeles, Memphis, Seattle, and Washington, D.C. Representatives of MPOs, transit operators, and State transportation departments in the surrounding areas were invited to attend. At each seminar, the host metropolitan area or transit system operator described how it had developed a contingency plan and discussed its problems and successes.

During 1980 DOT published a three-volume report, developed by the Massachusetts Institute of Technology for DOT, entitled "Transportation Energy Contingency Strategies." Part one described the roles and responsibilities of all the different participants who should be involved in the contingency planning process; part two described specific actions that would be appropriate for each of the participants; and part three provided a model case study of the preparation of a contingency plan in an ideal situation.

## IMPACT OF GASOLINE SUPPLY DISRUPTIONS CREATED INTEREST IN CONTINGENCY PLANNING

The first gasoline supply disruption began on October 19, 1973, when the Arab oil-producing nations imposed an embargo on all exports to the United States, and continued until March 18, 1974. Most people did not see this disruption as a long-term crisis and therefore did not appear to change their commuting habits. They adjusted to the difficulty of obtaining gasoline by eliminating some discretionary trips.

A survey by the National Opinion Research Center, "The Impact of the 1973-74 Oil Embargo on the American Household," showed that few people changed to carpooling (8 percent of the respondents) or used public transportation more (only 3 percent of the respondents), while 55 percent reported that they drove less and 52 percent drove slower. Commuter travel patterns changed very little, but discretionary, nonwork travel was restricted, particularly in the suburbs.

A New York State Department of Transportation study of the impact of the 1973-74 energy crisis on travel also concluded that people curtailed their driving, usually for nonwork trips, and to a smaller extent used public transportation more.

The problems experienced during the 1973-74 gasoline shortage spurred the first interest in contingency planning. The first areas to prepare contingency plans were Seattle, Los Angeles, and Dallas-Ft. Worth. In November 1975, the Seattle transit operator completed a draft contingency plan in response to a request from its council. The Los Angeles regional transit operator completed its first contingency plan in July 1977. The Dallas-Ft. Worth MPO

completed a comprehensive emergency contingency plan, in August 1977, recognizing that transit would have problems meeting projected ridership increases and that many local areas did not have access to public transportation. Little financial or technical help was available to these planners. Using their experience gained from planning for and dealing with problems such as transit strikes and severe weather emergencies, they developed strategies to respond to future gasoline shortages.

People generally regarded the 1973-74 crisis as a short-term condition and gradually returned to their pre-crisis methods of transportation. At the same time, interest in preparing contingency plans waned. In early 1979, warnings came from the Department of Energy, the oil industry, DOT, politicians, and the news media that the Iranian problems could trigger another gasoline shortage, and contingency planning again became a top priority.

Seattle's transit operator began a second contingency plan, completed in June 1979, that was to be a practical workbook rather than just a narrative report like its 1975 plan. At the same time the Seattle rideshare coordinator also prepared a contingency plan. Because of warnings of a possible gasoline crisis, the MPOs in Los Angeles and Washington, D.C., the transit system operators in Portland and Eugene, Oregon, and the rideshare coordinator in Los Angeles all began preparing contingency plans. Many other metropolitan areas also began preparing plans.

During the 1979 gasoline supply disruption, California was the first State to experience gasoline shortages, and gasoline lines began occurring in May 1979. The greatest impact was on the west and east coasts, but the situation began to improve by July. People again coped, mainly by eliminating discretionary trips or by combining trips. While no one has studied how people coped with the crisis in detail, in most of the urbanized areas we reviewed, available statistics indicate that vehicle travel was sharply reduced and transit ridership increased. In Los Angeles, for example, travel flow declined as much as 14 percent below 1978 levels during the shortage; transit ridership was 27 percent higher in May 1979 than in May 1978; and ridesharing applications almost quadrupled, from 11,000 to 40,000.

## CONTINUED VULNERABILITY TO DISRUPTION

As long as the Nation remains dependent on foreign sources of petroleum, it will continue to be vulnerable to supply disruptions. The United States is currently importing about 40 percent of its petroleum. The political history of the Middle East, which supplies nearly a third of U.S. petroleum imports, shows the types of upheavals that have affected and will affect petroleum production and exports. The recent strife between Iran and Iraq provides one more example of the need to anticipate disruptions in petroleum production and be prepared to cope with the resulting shortages.

Because future gasoline supply disruptions may be more severe and last longer than those experienced to date, the "muddle through" approach may not be enough during the next shortage. In addition, rising gasoline prices may further reduce travel by eliminating some discretionary trips, so that the option most people chose during the previous crises--eliminate trips and drive less--may require more sacrifice than it did before because the less essential trips have already been cut.

Contingency plans provide one essential step in preparing to deal with such gasoline supply disruptions. In addition to energy conservation plans to reduce the use of gasoline (or other types of energy), contingency plans could help people meet their mobility needs during periodic supply disruptions, with as little hardship as possible, until such times as conservation and other programs reduce U.S. dependence on foreign energy sources.

## OBJECTIVES, SCOPE, AND METHODOLOGY

The objectives of our work were to determine (1) what contingency planning has been done, (2) who are the appropriate people to be involved in the planning process and whether they were involved in the planning process in the areas under review, (3) the feasibility of actions proposed in the various contingency plans reviewed and the steps taken to prepare for implementing each action, (4) the cost of preparing the contingency plan and implementing the proposed actions, and (5) how well the Federal Government succeeded in encouraging such contingency planning.

According to the 1970 census, there were 279 urbanized areas with populations over 50,000, 25 of which have populations of more than 1 million. During our review we did detailed work in 5 of the 25 urbanized areas with populations of more than 1 million--Los Angeles, California; Chicago, Illinois; Washington, D.C.; Baltimore, Maryland; and Seattle, Washington--and 2 urbanized areas with populations from 50,000 to 999,999--Portland, and Eugene, Oregon. In addition, we also collected information on the status of the contingency planning activities in 21 other urbanized areas in the DOT regions where we were doing our detailed work.

Potential locations for doing our detailed work were limited because few areas had completed regional contingency plans at the time we began the review. In order to examine the process used in developing contingency plans, the feasibility of proposed actions, and the steps taken to prepare for implementing the proposed actions, we needed locations that had prepared contingency plans. Therefore, based on discussions with UMTA and FHWA representatives, we selected several of the large urbanized areas that had prepared either a regional or a transit system contingency plan. We picked areas in different geographic locations because the impact

of the previous gasoline shortages had varied around the country. Also, we selected areas with transit systems that ranged from very small bus systems to the large systems that involved bus, subway, and commuter rail operations because contingency strategies have to be tailored to the area's transportation system. The chart in appendix I provides specific information on each of the seven urbanized areas selected for detailed review.

We conducted discussions with representatives of FHWA and UMTA at DOT headquarters; in DOT regions 3, 5, 9, and 10; and at FHWA division offices in Washington State, Oregon, California, Illinois, and Washington, D.C., about

--their role in encouraging metropolitan areas to develop regional contingency plans, the funds provided for this purpose, and the type of technical assistance provided;

--the extent to which such contingency planning is being conducted; and

--the adequacy and practicality of contingency plans already completed.

We also reviewed the documents provided by DOT to help local metropolitan areas prepare contingency plans and DOT regulations on planning assistance and standards.

We reviewed the Emergency Energy Conservation Act (EECA) of 1979 (42 U.S.C. 8501) and the proposed Standby Federal Emergency Conservation Plan and regulations (10 CFR 477) issued by the Department of Energy (DOE) as required by EECA. While we discussed with DOE representatives the steps being taken by DOE to assist and encourage the development of State emergency energy conservation plans and the assistance being provided by DOT concerning the transportation segments of these plans, we did not review these planning activities in detail.

In each metropolitan area we discussed what actions had been taken to cope with previous gasoline shortages, how its contingency plan had been developed and what additional work was needed, and what steps had been taken to prepare to implement each element included in its plan. This involved contact with representatives of the MPO, the transit system operator, the rideshare coordinator, local government officials, and the State transportation and energy agencies. We reviewed planning documents, the contingency plans and supporting documentation, and statistical reports on transit ridership and rideshare/carpool applications. We did not review State emergency energy conservation planning activities, but we did discuss with planners the relationship of these plans with the contingency plans being prepared by the MPOs.

Because few of the organizations reviewed had kept specific records on the cost of preparing their contingency plans, we were unable to determine precise cost figures. We did, however, discuss with representatives of these organizations their estimates of how much they thought their contingency planning activities had cost. In many cases, projections had not been made for the cost of implementing the contingency plans, but we obtained them for the specific contingency actions when they were available.

We also reviewed reports on the impact of the previous shortages on transportation, studies on how people coped during the previous shortages, and general research on subjects such as altered work hour programs, use of school buses in mass transit, and ridesharing.

## CHAPTER 2

## MANY AREAS POORLY PREPARED TO HELP MAINTAIN COMMUTER MOBILITY DURING GASOLINE SUPPLY DISRUPTIONS

Although some contingency planning has been done, at the end of 1980 few areas were ready to take actions that would help more than a small segment of area commuters. Some areas have no contingency plan at all, while others have plans that address only a small segment of the area's transportation system, such as the public transit system or the rideshare matching operation. Even in those areas where either the MPO or the transit system operator has prepared a contingency plan, various problems will hinder implementation of the planned strategies.

Five of the seven areas reviewed did not yet have regional contingency plans in place, and most of these are unlikely to have an effective plan in the near future because little progress is being made in completing their scheduled work. Many factors contribute to this delay. Interest in contingency planning is highest when another crisis threatens; after the crisis passes contingency planning activities slow down. As a result, with limited planning staffs, particularly in the smaller MPOs, contingency planning has moved to a lower priority as more immediate problems are dealt with. In addition, local officials and planners indicated that the following constraints have also contributed to the slow progress in developing regional contingency plans: (1) lack of specific guidance for preparing the plans, (2) lack of information about what actions the Federal and State governments will take if another gasoline supply disruption occurs, and (3) confusion about how these contingency plans should interface with State emergency energy conservation plans required under EECA.

Mass transit operators in six of the areas we reviewed had prepared a contingency plan. While such a plan is an essential element of a regional contingency plan, the transit system operator can effectively plan for only those strategies it has the authority to implement. As a result, even the most effective transit system contingency plan will generally help only a small segment of the commuters because the system normally carries only a small percentage of area commuters, and equipment and personnel limitations will make any drastic increases in the transit system's capacity impossible.

In reviewing the contingency plans prepared by both MPOs and transit system operators, we found that unresolved conflicts and inadequate implementation strategies will limit the effectiveness of many of the planned actions. Because DOT has not instituted a review and approval process for contingency plans, these potential problems in the existing plans have not been

identified and corrected, and steps have not been taken to make sure similar deficiencies are not incorporated into the contingency plans still under development.

## CURRENT APPROACH HAS NOT OVERCOME HINDRANCES TO CONTINGENCY PLANNING

In spite of DOT's efforts to encourage urbanized areas to prepare for future petroleum shortages, they have not overcome inherent hindrances to such contingency planning, and most MPOs have not completed a contingency plan. Reasons given for the slow progress include the need for more specific DOT guidance, the lack of Federal/State cooperation, and uncertainties about actions those two levels of government might take in response to a future gasoline shortage.

### Most areas do not yet have a regional contingency plan

MPOs in only two of the urbanized areas reviewed had completed a comprehensive regional contingency plan at the time of our review. While the MPOs in the other urbanized areas had included regional contingency planning activities on their fiscal year 1981 work program, progress in completing the scheduled work varied in the different locations visited.

The MPOs in Washington, D.C., and Los Angeles completed their contingency plans in May 1979 and June 1979, respectively. The Los Angeles MPO revised its plan in August 1980. The Washington, D.C., plan, which covered both contingency and conservation actions, included expanded ridesharing programs, increased public transportation, work place conservation activities, and community assistance and information. The first Los Angeles MPO contingency plan included action to encourage public and private sector employees to rideshare, upgrade the capacity of the rideshare coordinators and transit operators to respond to increased demand, ensure availability of fuel for priority transportation services, and provide information to the public. The second Los Angeles contingency plan focused on coordinating planning efforts by the various groups, such as the transit operators, rideshare coordinators, and local governments, that would implement contingency actions.

MPOs in Baltimore, Chicago, Seattle, Portland, and Eugene had begun developing regional contingency plans. Baltimore and Chicago are scheduled to complete their contingency plans by the end of fiscal year 1981, but Chicago's progress has been slow; by the end of 1980, only an analytical background study and a draft plan outline had been completed.

The MPOs in Seattle, Portland, and Eugene do not expect to complete their contingency plans by the end of fiscal year 1981. The Portland MPO had just begun developing background data and

did not expect to start specific contingency work until after January 1, 1981. The Eugene MPO does not consider contingency planning an item of high priority or interest. Little progress has been made in Eugene since planners drafted a transportation contingency strategy document in March 1980, which outlined the area's planning framework.

In our survey of regional contingency planning in 21 MPOs in other urban areas, we found that only 1, in Rockford, Illinois, had completed a contingency plan. Twelve MPOs anticipated completing their contingency plans by June 1981. Most of the remaining MPOs had just started, or were about to start, their contingency planning activities.

## DOT efforts came too late to help prepare for the 1979 crisis

DOT's efforts to encourage the development of contingency plans were not much help to the transit operators and MPOs in preparing to meet the 1979 gasoline shortage because they began only a short time--about 1 month--before the shortages generally occurred. In addition, no new funding was provided. At the time, fiscal year 1980 planning funds (including those from FHWA and UMTA) had already been allocated for projects in each MPO's work program.

To prepare its contingency plan, for example, the Washington, D.C., MPO had to reallocate some of its fiscal year 1980 funds. It estimated the cost of the staff work to complete the plan at $10,000 to $12,000. The Washington, D.C., transit operator estimated the staff cost to prepare its plan at about $10,000 also.

In apportioning the fiscal year 1981 technical studies funds, UMTA identified approximately $10 million for energy contingency and conservation planning activities. UMTA indicated that contingency planning in 1981 should build on prior activities. For example, a minimum plan should be reviewed and updated, and contingency actions detailed to the point where they can be implemented as soon as possible. Most MPO planners agree that specific funding for contingency planning would help increase local interest in such planning.

DOT's technical assistance to help local areas prepare contingency plans also came too late for the 1979 gasoline shortage. In 1979 the assistance provided consisted mainly of disseminating information on the few contingency plans that had already been prepared. The three-volume report on transportation energy contingency strategies developed for DOT by the Massachusetts Institute of Technology was not distributed until 1980.

## Higher priority now given to other local problems

As memories of the 1979 gasoline shortage dimmed, interest and concern about preparing for another shortage also diminished. As a result, at the local level, higher priority is now being given to other problems. Because the MPOs have very limited planning staffs, particularly in the smaller urbanized areas, they cannot work on all the problems at one time. They therefore concentrate their resources on the most immediate problems, and progress on lower priority concerns is deferred. Staff at the Chicago MPO, for example, pointed out that during 1980 they were very involved with federally mandated requirements on air quality and mobility for handicapped individuals.

In some areas, local officials have not given a high priority to contingency planning because they are not convinced of the imminent threat of another gasoline shortage or because they experienced no major problems during previous shortages. They do not see any payoff from contingency planning and place more emphasis on developing a conservation program.

## Local areas need more specific guidance on contingency plan preparation

One factor delaying contingency plan preparation is the lack of information provided to local planners concerning (1) the types of gasoline shortages the areas should be prepared to deal with and (2) what should be included in a contingency plan. Even though DOT provides general guidance in these areas, planners have expressed the need for more specific information on the range of probable gasoline shortages and the benefits that can be achieved by various contingency strategies as well as obstacles to their implementation that must be overcome.

Some local metropolitan area planners have pointed out the need for a realistic scope for their contingency plans. Information from the Federal Government on (1) possible national petroleum shortages, (2) the impact of these shortages on gasoline availability, when considering the priorities given to such things as heating oil, jet fuel, etc., (3) and the probability of various levels of shortages occurring would help them design more appropriate responses. We believe that without good requirement determination, contingency planning is not only difficult but risky. Erroneous plans or unnecessary investments to prepare for severe gasoline shortages that are unlikely to occur could result in a loss of public confidence and support as well as discrediting the need for contingency plans.

This problem is aggravated by the lack of criteria for contingency plans. DOT has encouraged urbanized areas to begin contingency plan preparation but has not told them what a good contingency plan should look like. DOT has not developed criteria that areas could use in evaluating contingency plans. Some local planners feel that they are each being asked to simultaneously invent the wheel.

Uncertainties about Federal and State actions during a shortage

Most local areas have little idea of the measures that either the Federal 1/ or State government will take in response to an energy shortage, or under what circumstances such measures would be imposed. Different measures will have different effects on commuter travel patterns and will require different local-level responses. For example, a gasoline rationing program would have a different impact on the local transit system or rideshare matching operation than a vehicle use sticker measure prohibiting the use of a vehicle for a prescribed number of days a week. In the same way a mandatory compressed work week versus a staggered work hour or flexible work hour program would require different responses by the local transit system operator.

Title II of the Emergency Energy Conservation Act of 1979 provides the framework for a coordinated national response to a severe energy supply interruption. Under EECA, DOE was required to develop a Standby Federal Emergency Energy Conservation Plan containing measures to restrain demand for gasoline and other motor fuels as well as other energy sources. This proposed plan was first published on February 7, 1980, but on February 23, 1981, DOE withdrew or proposed the withdrawal of most of the measures in the plan. In addition, the remainder of the plan would be imposed only if a State failed to "substantially" meet monthly emergency energy conservation targets established for each State by the President after he has determined that there is an energy supply problem. As a result, no Federal measures could be taken for an extended period of time. After the conservation targets are imposed, each State has 45 days to prepare its emergency energy conservation plan, and the plan must be allowed to operate at least 90 days before the President can determine that the State is not meeting its target and impose the Federal measures.

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1/Our recent report, "The Department of Energy's Reorganization of Energy Contingency Planning Holds Promise--But Questions Remain" (EMD-81-57, Mar. 4, 1981), noted that DOE's contingency planning efforts are seriously behind schedule and prospects for having an adequate plan in the near future are poor.

While the States were encouraged to develop their plans in advance, a September 23, 1980, report on Emergency Energy Conservation Programs by the Committee on Government Operations, U.S. House of Representatives, found that the level of emergency planning under EECA appears to be dangerously inadequate and that the United States is not prepared to respond to an emergency in a timely and coordinated manner. In most areas we reviewed, the State emergency energy conservation plan had not yet been developed. As a result, local planners must develop regional contingency plans without knowing what actions the Federal or State governments will take.

## More coordination needed at both Federal and State level

At the local level two different Federal agencies--DOT and DOE--are promoting energy contingency planning. These two approaches need to be better coordinated so that the State and local level planning will be mutually supportive.

DOT began encouraging the development of contingency plans to maintain mobility during energy shortages in March 1979, targeting the local MPOs as the appropriate level for plan preparation. The flow of technical and financial assistance was channeled through FHWA regional offices, which work with the State transportation departments, or UMTA regional offices, which deal directly with the MPOs.

With the November 1979 passage of EECA, DOE encouraged the States to begin preparing emergency energy conservation plans designed to hold or reduce energy consumption to levels that would be mandated by the President in an energy emergency. These plans deal with various forms of energy in potentially short supply, in addition to petroleum. Because the transportation sector accounts for such a large portion of petroleum usage, it plays a significant role in the development of these plans. DOE efforts were directed at the State governments. Ability to implement energy conservation measures at the State level, however, is somewhat limited because most of the demand reduction and mobility maintenance actions must be implemented by local transportation agencies and operators. Because of this, some States are involving the local areas in developing State plans.

As a result, local planners can be involved in energy contingency planning being directed by two different Federal agencies--DOT or DOE--with slightly different objectives--maintaining mobility versus emergency energy conservation. The differences and necessary interrelationship between these two planning activities have not been clearly defined.

Ideally, strategies in both plans should be coordinated and mutually supportive. For example, the State plan might include promoting the use of ridesharing to reduce fuel consumption, while the local contingency plan would include increasing the carpool matching operation to help commuters form carpools so that they could get to work with the amount of gasoline available to them.

Because the interrelationships between the two planning activities have not been clearly identified for the local planners, local contingency strategies already prepared may not be considered in the development of State plans. Consequently, conflicts and gaps could develop between the local and State plans. Since most States have not yet developed their emergency energy conservation plans, specific problems have not yet been identified. As an example of a potential gap between State and local plans, the Seattle transit operator had identified the need for State action to adjust school hours so that school buses could be made available to supplement transit service during rush hours. While the State energy office was informed about the need for State action, it was unable to gain the support of the Governor.

## EMERGENCY RESPONSES WILL BE LIMITED IN AREAS THAT DO NOT HAVE REGIONAL CONTINGENCY PLANS

Even though only two areas reviewed had a regional contingency plan, most others had a transit system contingency plan which is an essential element of a comprehensive regional contingency plan. The transit system contingency plans will have limited impact, however, because transit system operators can effectively plan only those actions that they can implement. The transit system, however, normally carries only a small percentage of the area commuters, many systems are already operating at capacity during rush hours, and equipment and personnel limitations prevent rapid increases in transit capacity. Thus, transit operator contingency actions would help a limited number of area commuters during an emergency.

### Many area transit systems have contingency plans

In all urbanized areas reviewed except Chicago, the transit system operator had prepared a contingency plan.

The Washington, D.C., MPO asked the transit authority to prepare a transit contingency plan as part of the regional plan. This plan, completed in May 1979, included actions to meet potential increased ridership needs and improve fuel use, such as retaining a strategic fleet of 257 buses and increasing fuel storage facilities. The plan also discussed other issues, such as the lead time needed to increase transit service, front-end funding needed, and the need to stagger work hours to obtain optimum transit system use.

The Los Angeles and Seattle transit system operators have been involved in contingency planning since the first gasoline shortage in 1973-74. Los Angeles' first transit contingency plan, completed in July 1977, outlined actions to be taken in a moderate and a serious crisis. The plan's main features were designed to expand capacity by establishing a 300-bus reserve fleet and extending rush hour operations to 16 hours a day. A revised contingency plan was adopted in June 1979, but it relied on the same measures to increase capacity. The Seattle transit operator completed a draft contingency plan in November 1975. This plan was primarily a narrative report which recommended general strategies. A second contingency plan, completed in June 1979, had a short-term severe crisis response--which was a task-oriented transit workbook--and a long-range approach to energy and transit needs. Seattle is currently in the process of revising the 1979 plan and, with UMTA funding, is preparing a contingency planning handbook for other transit systems.

The Baltimore transit operator prepared a contingency plan in April 1979 which detailed options and strategies to increase total transit system capacity and improve operating efficiency, such as increasing loading standards, reducing the number of bus stops, and expanding park-and-ride service. The contingency plan also identified actions, such as adjusting school hours and implementing staggered work hours in the central business district, which required the cooperation of other government and private entities for implementation.

The Portland transit operator's June 1979 contingency plan identified actions to obtain maximum use of the bus fleet during rush hours. The plan also identified actions concerning flexitime and school hours for regional consideration that were beyond the transit system operator's control.

The Eugene transit operator completed a contingency plan in August 1979. The plan was divided into three parts: (1) readiness prior to an emergency, (2) short-range emergency measures, and (3) long-range emergency measures.

## Transit systems serve only a small portion of the population

Because mass transit systems feel a substantial impact when gasoline shortages make driving to work alone impractical, they were the leaders in contingency plan preparation. In many areas, theirs are still the only contingency plans in existence. The ability of a transit system contingency plan to meet people's mobility needs during an energy crisis is limited, however, because (1) most transit systems normally carry only a small portion of area commuters and achieving even the most optimistic estimates for expanding their capacity would help relatively few

commuters and (2) many people work in suburban locations where transit service is not as good as that provided to central business districts.

Although our review involved several of the Nation's largest transit systems, only a relatively small percentage of commuters used mass transit in these areas. Even with large-scale expansion, existing transit systems would accommodate only a small portion of total area commuters. For example, the Los Angeles transit system carries less than 6 percent of all work trips in Los Angeles County. The transit operator projected that with the bus fleet at June 1978 levels, activating a 300-bus reserve fleet and expanding the daily rush hour from 6 to 16 hours would enable the system to carry only 10.5 percent of the work trips. The Chicago, Seattle, and Washington, D.C., transit systems carry about 15 percent of the area work trips, but the system in Portland carries only 8 percent.

In addition to capacity constraints, the fact that many homes and work locations are not adequately served by mass transit further limits the potential contribution of transit toward maintaining mobility in a severe fuel shortage. Mass transit is usually concentrated in central business districts or provides service between suburban areas and central business districts. The Seattle transit system is oriented toward the downtown and University of Washington areas. However, these two areas contain only 27 percent of the workers in the Seattle/King County region. The Washington, D.C., area transit service is oriented toward the central city and nearby Arlington County, Virginia, but less than half the region's commuters work in these areas. The transit system in Portland is also oriented toward the central business district where only 14 percent of regional work trips end or begin.

The Seattle transit operator, in commenting on this report, said it believes that its plan will go a long way toward meeting emergency commuter needs in the area. It estimated that, operating at 200 percent of capacity, the system could carry 70,000 more riders during each of the peak rush periods without adding service or equipment. The operator's current plan includes strategies to fill up buses that are currently operating at less than capacity, develop reverse commutes to use buses that currently return to suburban locations almost empty, and cut nonproductive service.

## Transit system plans limited to transit operations

In reality, transit system operators can effectively prepare only those contingency strategies that they have the authority or ability to implement. These will be limited mainly to expanding the transit system's capacity, providing better public information, or improving the transit operation's efficiency. Even

strategies allowing the transit system to serve more commuters, such as staggered work hour programs to spread rush hours over a longer time or use of school buses to add to system capacity, rely on actions by other organizations. The transit operator must be a full working partner in the development of such strategies if their full benefit is to be achieved, but the transit operator cannot unilaterally develop such an approach and have much chance of getting it implemented during a sudden gasoline crisis.

While the contingency plans prepared by transit operators that we reviewed discussed the need for action by other groups to assure implementation of certain actions, workable strategies to obtain their support were not developed. All transit operator contingency plans we reviewed, for example, called for widespread adoption of variable work hour programs by public and private employers. However, efforts by transit operators to promote flexitime have achieved little success. Some transit operators' efforts to arrange emergency use of school buses have also failed to gain adequate support from outside groups.

Alternative work hour programs

Expanding the rush hour period can increase the existing transit system's capacity by allowing the system to schedule more runs with existing equipment. Because most transit systems are unable to enlarge their bus fleets quickly, a shift of ridership to either before or after the period of peak demand is the only way for the systems to absorb substantial increases in ridership brought on by a fuel shortage. Spreading the morning and evening rush hours can also reduce traffic congestion as fewer vehicles will be on the roads at a given time. Reduced traffic congestion can result in shorter commuting time and gasoline savings.

Alternative work hour programs are attempts at expanding the traditional morning and afternoon rush hours. The two basic types of alternative work hour programs are staggered work hours and flexitime programs. Under staggered hours, groups of workers are scheduled to begin work at set intervals, thus spreading their use of highways and transit systems over substantial periods. Under flexitime programs, which allow employees to choose their own schedules, commuters who turn to mass transit can alter their work hours to more closely match transit schedules or travel in off-peak periods when the transit system has excess capacity. Flexitime programs also aid commuters in forming carpools with others.

The transportation benefits of flexitime programs have been documented in several cities. In Seattle a survey of transit behavior of 626 employees at eight companies operating under flexitime found a definite shift away from peak travel times. After flexitime, the number of employees commuting during the existing transit peak hours fell by 16.2 percent and 12.8 percent in the

a.m. and p.m. peaks, respectively. Furthermore, 4.6 percent more employees carpooled and 5.1 percent more rode transit. A similar study in Boston recorded a 0.8 percent increase in carpooling and a 5.8 percent increase in transit usage, while 83 percent of those surveyed indicated that commuting was easier under flexitime.

All contingency plans we reviewed either incorporate alternative work hour programs or mention their potential benefits. However, problems remain in most areas which make widespread adoption of alternate work hour programs in a fuel shortage doubtful. Transit system operators' efforts to get such programs adopted during the 1979 crisis were not effective. Attempts by the Portland, Eugene, Los Angeles, and Washington, D.C., transit operators to promote flexitime among area employers met with little success. While the Eugene transit operator did not undertake a formal effort to promote flexitime, it got a very negative reaction to its informal presentation to businessmen. In Washington, D.C., a large number of Federal employees currently have flexible work schedules. This is primarily the result of a Government-wide, 3-year experimental program authorized by the Federal Employees Flexible and Compressed Work Schedules Act of 1978 (5 U.S.C. 1601, note). Most Federal agencies began their programs in the fall of 1979. Under these flexitime programs, many Federal workers are getting to work earlier, and the transit system operator has reported that ridership has increased both before and after the traditional peak periods.

Emergency use of school buses

Some transit operators' contingency plans would use school buses for transit. School buses represent a substantial opportunity both for expanding the capacity of the transit fleet and more efficiently utilizing an existing transportation resource. The United States has 7-1/2 times as many school buses as transit buses, and these vehicles are idle for much of the day. Restrictions on using school buses vary from State to State, however, and numerous conflicts must be resolved before they could be used to supplement transit service during an energy shortage.

Transit operator contingency plans in Eugene and Seattle rely on use of school buses as the primary method of expanding transit capacity in a fuel shortage. In both areas, the transit operator has been unable to overcome certain obstacles which are outside its direct control. Lack of specific agreements with school boards, labor union objections, and the conflict between the school and commuter peak periods all require coordinated action with outside groups.

In Portland and Seattle, planning officials cite the difficulty of developing detailed plans involving school buses without knowing how many buses would be available and at what times.

These decisions must be made by school boards. However, negotiations between the Eugene transit operator and the local school district have yet to proceed beyond the staff level. After months of negotiation, the Seattle transit operator has developed a draft school district contract covering the use of the school buses to supplement transit service. The school districts will supply the buses, drivers, maintenance, and fuel and be reimbursed by the transit system. The contract describes the terms of reimbursement, the scope of the service to be provided, and the liability of each party for damages incurred during the service. The number of buses and times of availability have not yet been worked out, but the contract generally provides for using the school buses within school district boundaries at times when they are not required for school purposes.

Labor union problems could result in both Eugene and Seattle if school district drivers, who are not transit union members, drove school buses in transit service. Although this issue must be resolved through negotiations between the transit operator and the labor union, no formal negotiations have taken place in either city.

The times when school buses are in use generally coincide with the times of greatest demand for commuter transit service, especially in the peak morning hours. This conflict has not been resolved in either Eugene or Seattle. In both cases, a change in school hours would require action by either the school board or the Governor. However, negotiations with Eugene school districts have not proceeded past the staff level to the school board. In Seattle, efforts to get the Governor's support to change school hours in an emergency have been unsuccessful. Seattle is continuing efforts to gain the support of the new Governor in 1981.

## UNRESOLVED OBSTACLES WILL HAMPER IMPLEMENTATION OF SOME PLANNED ACTIONS

There are numerous obstacles to timely implementation of proposed actions of the contingency plans we reviewed. Because DOT does not have a required review and approval process for these plans, these inadequacies have not been identified and corrective action has not been initiated. The problems include inadequate preparatory work, obstacles to acquiring and maintaining a reserve bus fleet, unresolved labor union issues, and lack of contingency action planning.

### Review process needed to identify and correct plan deficiencies

DOT regulations do not require review or approval of urban area transportation contingency plans. While FHWA and UMTA regional staffs have indicated they will review and comment on such plans, they had not done so at the time of our review. The lack

of any criteria for the adequacy of these contingency plans will limit the usefulness of this exercise, and the review's quality and usefulness will vary from region to region.

The DOT certification of the planning process is directed at determining compliance of an area's transportation planning process with regulations. If an urbanized area includes energy contingency planning in its work program but fails to undertake such activity, FHWA and UMTA, during the certification process, could identify that failure as a major point and give the area a warning. According to FHWA and UMTA region 3 officials, if an urbanized area failed to conduct contingency planning, the warnings would escalate over a 2 to 4 year period until certification was withdrawn, and as a result DOT funding would be cut off. In providing energy planning information to MPOs in Illinois, for example, the Illinois Department of Transportation noted in September 1980 that the DOT certification letters require MPO progress in energy contingency and conservation planning and implementation. Presumably, they stated, future certification would be withheld in the absence of satisfactory progress. Regional UMTA and FHWA officials, however, feel that the likelihood of withdrawing an urbanized area's certification for failing to do contingency planning is small because the preparation of such a plan is not specifically required.

Because the Baltimore area had not completed a regional contingency plan, FHWA and UMTA noted in their October 1980 review of Baltimore's transportation planning process that the level of contingency planning effort in that region should be increased. The certification statement suggested that Baltimore develop a wide variety of strategies that could be implemented quickly along with the institutional roles and responsibilities to implement the measures.

Most DOT efforts to date have been directed at urbanized areas that have not prepared a contingency plan at all. We identified no actions to identify and correct deficiencies in existing contingency plans.

## Inadequate preparation may delay implementation during a crisis

For some contingency strategies, preparatory work is needed so that the strategies can be implemented quickly when a crisis occurs. For many actions this work has not been done, and realistic estimates of the feasibility of and timing for implementing these actions cannot be determined.

Since implementation of most planned contingency actions has generally not been tried, there are few concrete examples of the consequences of the lack of preparatory work. The experiences of the Los Angeles transit operator during the 1979 gasoline shortage provide some indications, however. The transit operator tried

to implement a provision in its March 1979 plan to open approximately 500 locations where patrons could obtain printed materials (for example, bus timetables and maps) on the operator's services. The board of directors authorized establishing the centers on May 8, 1979, but they were not opened until after the crisis had abated because preparatory work had not been done. The sites had to be selected, agreements signed, and servicing arranged before the centers could open.

Based on our work, the following planned actions also appear to need preliminary work if they are to be implemented when needed.

Alternative work hour programs

As mentioned previously, transit system operators were unsuccessful in getting businesses to adopt alternative work hour schedules during the 1979 crisis. Most regional plans also call for major employers to voluntarily adopt some form of alternative work hours during an energy crisis. Strategies to achieve this objective, however, need more development.

Implementation of any modified work schedule program needs to be coordinated with other employers in the area, the transit operators, and the rideshare coordinator so that the program's transporation impact will be beneficial. Planning for implementation to achieve the desired changes in travel time has not yet been done. In Los Angeles, for example, we found little information available on current work schedules that could be used to determine how these schedules need to be adjusted to facilitate ridesharing or use the transit system's available capacity.

Ridesharing programs

Ridesharing 1/ offers the greatest potential for maintaining mobility with the reduced gasoline available in an energy emergency because of the relatively small proportion of commuters who can be carried by mass transit. To maximize ridesharing during a gasoline shortage, advance work to involve major employers in rideshare promotion is needed to provide a base for an expanded program to facilitate forming carpools during an emergency.

Some ridesharing contingency plans concentrate on general promotional activities and steps to increase the capacity of the carpool matching function. Because ridesharing requires clusters of trip origins and destinations, which for the work trip occur

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1/Our report on ridesharing, "Increasing Commuting by Transit and Ridesharing: Many Factors Should Be Considered" (CED-81-13), was issued on November 14, 1980.

at the work site, the employer is the logical focus for ridesharing promotion. Decentralizing the rideshare function has been effective in the past.

The Portland ridesharing program, for example, has achieved one of the Nation's highest participation rates (8 percent of all commuters). As of August 1980, the Portland ridesharing coordinator was working with 357 employers representing 131,059 employees. Many of these companies have in-house carpool matching programs and/or transportation coordinators. The director of the ridesharing program said that the success in decentralizing ridesharing promotion and services has greatly increased the ability of ridesharing participation in the region to expand quickly in the event of a fuel shortage.

Ridesharing was a major element in the Washington, D.C., regional plan, and some of these activities were expanded during the 1979 shortage. For example, in May 1979 the metropolitan Washington, D.C., MPO in cooperation with the Board of Trade, the U.S. General Services Administration (GSA), and several local governments launched a campaign to make it easier for government and private sector employees to form carpools. Through this effort, questionnaires for carpool matching services were distributed to area employees. GSA distributed the questionnaires to Federal employees, local governments ran their own campaigns, and the Board of Trade wrote to more than 100 of the area's largest employers encouraging participation in the campaign. As a result of the campaign, the MPO received over 6,000 carpool matching requests in August 1979, or four times the 1,400 requests in May 1979.

Multimodal information network

Establishment of multimodal emergency information networks to provide coordinated and integrated information on all public transportation systems, as well as paratransit and ridesharing services, also requires advance preparation involving several agencies. A network would, however, provide the public transportation options with minimal contact and limited frustration in an energy emergency.

In a November 1980 staff paper, the Los Angeles MPO staff concluded that the public sector could not solve an emergency shortage because of the public agencies' limited transportation capacity; the solution must come from individual adjustments to scarcity. The staff further stated that the private sector, particularly large employers, would play a key role in assisting individual adjustments, and a functioning emergency transportation information network could provide information on transportation alternatives to help the public make these adjustments.

The August 1980 Los Angeles MPO contingency plan lists several actions related to establishing an emergency information

network including (1) the local governments appointing crisis managers to provide emergency transit and ridesharing information to the public and (2) identifying approaches to establishing both public and private sector decentralized emergency transportation information centers. Little progress had been made toward establishing an emergency multimodal information network.

The steps needed to establish the information network include

--finding the sites to be used for distributing printed materials,

--signing agreements with site owners, and

--arranging for servicing and/or staffing these centers.

## Actions to increase transit capacity using a reserve bus fleet face many obstacles

Several of the contingency plans reviewed included the use of a reserve bus fleet to increase transit capacity. Numerous problems must be overcome, however, so that the transit system operator will be prepared to activate these buses quickly in an emergency. Potential problems include actually accumulating the reserve fleet, maintaining the fleet in operating condition, and recruiting and training drivers.

Both the Washington, D.C., and Los Angeles contingency plans include activating a reserve bus fleet. While Washington, D.C., is further along in preparing to deploy the reserve fleet, neither area has resolved all problems.

### Acquiring and maintaining a reserve bus fleet

To allow transit system operators to accumulate a reserve bus fleet, UMTA removed the requirement that transit systems sell buses being replaced and use the proceeds to offset the cost of new buses. Many of the buses being replaced, however, are too old and used to be suitable for a reserve fleet.

Of the transit systems reviewed, only one had a reserve fleet. As of August 1980, Washington, D.C., had a reserve fleet of more than 200 buses. Even though the Los Angeles transit system contingency plans prepared since 1977 have called for a reserve bus fleet, as of November 1980 the reserve still did not exist.

According to the transit operator's staff, Los Angeles has not been able to store any buses because ridership levels have required all operable equipment to remain in service. Retired

buses were not economically feasible to repair and were stored for parts and scrap. The operator has begun (in fiscal years 1980 and 1981) replacing almost one-half of its aged fleet by purchasing 1,200 new buses. Transit operator officials plan to create the reserve fleet from the replaced buses in the best condition. According to these officials, the reserve fleet size will depend on the condition of the buses retired.

In addition to not having the reserve bus fleet, the Los Angeles transit operator did not have facilities to store 300 or more reserve buses. Transit staff were negotiating a lease/purchase agreement of a 12-acre site for storing as many as 1,000 stockpiled buses, in November 1980. Moreover, according to a transit operator official, the storage site should be covered to protect the reserve fleet from the elements. Covered storage would increse the reserve buses' life.

Once the buses are stored, getting the buses back into service and keeping them in service is a problem. In the March 1979 Los Angeles contingency plan the transit operator anticipated "mothballing" (that is, not performing any maintenance on) the reserve fleet. However, a transit operator official believes that after 6 months it would take considerable time and effort to return the buses to service. For this reason, a minimal maintenance program for the reserve fleet is being considered.

Activating the reserve fleet

Lack of trained personnel and scheduling difficulties may hamper activation of the reserve bus fleet. In preparing its plan, the Washington, D.C., transit operator noted that recruiting and training the additional drivers and maintenance personnel (needed to activate the reserve fleet) could take up to 3 months. Los Angeles estimated that an additional 340 drivers would have to be recruited and trained in order to put and keep a 300-bus reserve fleet on the road. Training 340 drivers would take over 6 weeks because of limited training capacity.

In addition, Los Angeles does not have an adequate maintenance capacity (facilities and staff) to keep the reserve fleet on the road. The transit operator did not have enough mechanics (as of August 1980) to maintain 300 more buses. Recruiting and training the additional mechanics needed to keep the reserve fleet in service would be extremely slow since training and breaking in a bus diesel mechanic takes 1 to 2 years. Los Angeles also had inadequate maintenance facility capacity to absorb 300 more buses. The delivery of 940 new buses in fiscal year 1981 will continue to strain maintenance facility capacity.

Developing routes and schedules for these additional buses could also delay implementation. In its 1979 plan, the Seattle

transit operator, for example, planned to use school buses as feeders to its express bus system. To identify the routes for implementing the feeder system, it planned to survey park-and-ride lot users to identify their home locations and provide feeder service in those areas. Seattle now plans to substitute school buses on regular routes in King County and is working on route plans for these buses.

## Unresolved labor union issues could hinder implementation of some actions

In developing contingency plans, the impact of labor agreement provisions must be considered. If a planned action violates these provisions, negotiations to resolve these conflicts must be undertaken before an emergency occurs so that implementation will not be delayed or prevented.

As mentioned previously, plans by Seattle and Eugene transit system operators to use school bus drivers in emergency transit service violate exisiting labor agreement provisions. The transit system operator, however, has not yet negotiated these issues with the transit workers union.

The Portland transit operator contingency actions to increase transit capacity include route reallocations and shortlining some routes. Under normal circumstances, these changes would take 2 to 3 months to implement because the labor contract calls for a new driver route sign-up before any major route changes. The transit operator has not approached the union concerning possible emergency route changes to react to a fuel shortage in a timely manner.

The Los Angeles transit operator wanted to contract out the servicing of the 500 transit information locations it attempted to establish during the 1979 gas crisis. Because of a labor union agreement provision, however, servicing had to be done by union members.

## Availability of funding for contingency actions is unknown

Many of the contingency actions in the plans reviewed will require substantial amounts of money to implement in an energy emergency. Sources for these needed funds have not been identified. Some contingency plans do not even estimate the amount that would be needed to carry out planned actions.

It is obvious that the funding issue is likely to constrain the effectiveness of local responses. Currently, there is no good measure of the size of the problem nationally. The better local contingency plans are prepared, however, the more convincing the case will be to justify increased funding from whatever

source. As part of contingency planning, analysis should indicate how much money is needed and the incremental benefits that can be achieved with additional funding.

The Washington, D.C., transit contingency plan suggested front-end financing to recruit and train bus drivers and maintenance personnel, rehabilitate buses, and procure spare parts. The cost of adding 257 buses to the scheduled fleet would have required a one-time expense of $2.9 million for mechanical rehabilitation and personnel training, and an increase of about $5.3 million in the fiscal year 1980 operating subsidy. Neither the transit operator nor the local jurisdictions had the funds to operate the strategic reserve fleet.

Los Angeles transit system staff estimated a minimum cost of $25.5 million to operate the 300-bus reserve fleet for 1 year, in addition to the cost of returning the fleet to service. Revenues generated by the added ridership carried during a gasoline crisis are unlikely to meet the additional costs.

The Seattle transit operator estimated that implementing its 1979 plan for a year would add $7.9 million to the 1980 operating budget, and it would cost almost $4 million more if 190 school buses were used in transit service for 1 year. Only about a third of the increased cost would be recovered through fares, and to finance the remainder, the transit operator had planned to ask its governing board for additional funds. Seattle's recently revised plan calls for a temporary fare increase to fund the initial phases. The operator agreed that the funds from the increase would not be sufficient in all cases and additional outside funding would be needed.

The Portland rideshare operator estimated that it would have a $37,500 funding shortfall if its contingency plan were implemented for 3 months. Again, the operator could not fund the increased costs.

## CONCLUSIONS

Most urbanized areas do not yet have a regional contingency plan. While all areas reviewed had scheduled contingency planning activities in response to DOT's encouragement, little progress is being made toward completing such plans. Because there is no mandatory contingency planning requirement, urbanized areas have deferred plan development to deal with other local problems that appear more urgent. Unless new impetus is given and efforts made to reduce hindrances to contingency plan development, it appears unlikely that most urbanized areas will be able to do much to help meet their populations' mobility needs in another petroleum shortage.

Unless existing contingency plans are corrected so that workable contingency strategies are developed and needed preliminary work is funded and carried out, even those areas with contingency plans will have little success in helping meet their mobility needs. Because little guidance was available when the existing contingency plans were developed, there is little uniformity in their scope and value. These contingency plans have not been reviewed or evaluated to determine if they will make any significant contribution toward meeting area mobility needs.

Additional emphasis needs to be given to developing workable strategies that will help significant numbers of people. Actual implementation of the planned strategies will often be impossible or greatly delayed during a gasoline shortage because the preparatory work to be ready to implement them has not been done. In some cases serious obstacles appear to exist that would preclude any benefits being achieved. In addition, funding for such implementation has not been identified or the amount needed even determined.

## MATTERS FOR CONSIDERATION BY THE CONGRESS

Because of the limited achievements to date under DOT's efforts to encourage development of contingency plans, new efforts are needed to ensure that urbanized areas will be prepared to help meet their populations' mobility needs during gasoline shortages. To overcome the resistance to contingency planning at the local level, congressional action is needed to support the need for such planning. There is a range of actions that could be taken:

--Support DOT efforts with explicit expression of the Congress' interest in regional contingency plan development by actions such as passing a congressional resolution or conducting oversight hearings.

--Make funding specifically available to communities or regions for preparing contingency plans and for preparing to implement the plans.

--Require an approved regional contingency plan as a condition for receiving any Federal transportation assistance.

## RECOMMENDATIONS TO THE SECRETARY OF TRANSPORTATION

To expedite the preparation of regional contingency plans with workable strategies, we recommend that the Secretary

--work with the Department of Energy to develop specific information on potential shortfalls of petroleum supplies and the impact of shortfalls on the availability of gasoline to motorists, and provide more information to local planners on the ranges of shortfalls for which they should be developing contingency actions and the Federal actions that could be expected for given shortages;

--develop specific criteria on what regional contingency plans should contain, what types of strategies are appropriate for each level of energy shortfall, and the acceptable periods of time needed to implement contingency actions;

--provide guidance on the relationship between contingency plans and State emergency energy conservation plans; and

--establish a required review process for all contingency plans developed using DOT funding and develop procedures to inform MPOs of inadequacies in and assist them in correcting their planned strategies.

## AGENCY COMMENTS AND OUR EVALUATION

We provided copies of the draft report to the Secretary of Transportation and the Secretary of Energy for review and comment. Their comments are included in their entirety in appendixes II and III, respectively. We also provided segments of the report for review and comment to representatives of MPOs and transit operators contacted during our review. We received comments from the Seattle and Portland MPOs and the transit operators in Seattle, Portland, Eugene, and Washington, D.C. The Portland MPO and the transit operators in Portland and Eugene stated that the report was an accurate description of what happened in their areas. The Washington, D.C., transit operator and Seattle MPO suggested changes to correct minor points in the report, which we have made. The other comments received are discussed below.

### Department of Energy

DOE agreed that advance planning efforts by regional and local agencies and organizations will better enable them to meet their commuter transportation needs during future petroleum supply disruptions. DOE concurred in our recommendations that it work closely with DOT in connection with regional transportation contingency planning. It pointed out that it has already engaged in a number of cooperative efforts and will continue to coordinate with DOT.

Department of Transportation

DOT stated that the report does not provide a context for assessing the status of urbanized areas' contingency plans because it does not reflect the impact of recent policy decisions removing Federal petroleum price and allocation controls and transferring energy programs to other levels of government or to the private sector. It noted that these actions may provide sufficient assurance of an orderly adjustment to any future energy supply interruption except perhaps in the event of severe shortfalls. While we agree that rising gasoline prices may reduce travel, we do not believe this eliminates the need for contingency planning, particularly for severe shortfalls. As we pointed out (see p. 7), rising gasoline prices may force many people to eliminate discretionary trips. As a result, the need for contingency plans will be even greater during future gasoline shortages because it will be much more difficult for people to further reduce their travel. They will need help to find alternative methods, such as public transit or ridersharing, to get where they need to go.

DOT also stated that to provide a proper context the report should (1) describe the processes for developing and implementing the Federal and State Standby Emergency Energy Conservation Plans (under EECA) and the State Energy Conservation Plans (under the Energy Policy and Conservation Act of 1975) and (2) recognize the potential of nonwork trips for conserving fuel and preserving mobility during petroleum shortages. We did discuss the planning being done under EECA (see pp. 14 and 15) and pointed out the need to better coordinate these efforts with local contingency planning. One of the purposes of the Energy Policy and Conservation Act (42 U.S.C. 6201) was to promote energy conservation and to reduce the rate of growth of energy demand. Under this act, the States were encouraged to prepare and implement plans to reduce the total amount of projected energy consumption in 1980 by 5 percent or more. During this review, we examined planning for sudden gasoline shortages and not ongoing energy conservation efforts. We also concentrated on the need to provide alternatives for commuters because the nonwork trips are to a large extent discretionary and because transit systems generally have underutilized capacity outside the peak rush periods.

DOT opposed two of the suggestions we made for consideration by the Congress--requiring approval of contingency plans as a condition for receipt of Federal transportation grants and making funds available for developing and preparing to implement contingency plans. DOT believes this would elevate contingency planning to a unique status. In our opinion, the low priority many urbanized areas are now giving to contingency planning activities and the lack of progress in developing contingency plans

indicate the need for additional efforts to encourage their development. We believe that these two suggestions have the potential to achieve this objective. Adoption of such proposals will depend, of course, on the degree of importance the Congress places on urbanized areas having contingency plans to maintain mobility during gasoline shortages.

DOT had no objection to our first recommendation that it should work with DOE to furnish additional information on potential shortfalls. Regarding the need for information on Federal actions that will be taken during gasoline shortfalls, DOT pointed out that DOE intends to retain the public information and minimum fuel purchase measures in the Standby Federal Plan. DOT further stated that urbanized areas should proceed on these assumptions in preparing their contingency plans and should not wait for additional information on likely Federal actions. While we agree that it is important to proceed with contingency planning, the potential impact of Federal actions on local contingency strategies (see p. 14) makes it important for Federal plans to be developed and communicated to the State and local levels as soon as possible.

DOT disagreed with our remaining recommendations because it believes a prescriptive Federal involvement would be counterproductive and because contingency plans must be tailored to local values, conditions, and institutions. DOT opposed any attempt to impose national uniformity on contingency plans and believed it would be unwise to overspecify criteria for contingency plans or provide specific guidance on the means to coordinate these plans with State emergency energy conservation plans. We believe DOT is misinterpreting these recommendations.

We recommended that DOT establish a required review process for all contingency plans developed with DOT funds so that deficiencies in these plans could be identified and corrected before they are needed. We do not believe that this would result in national uniformity for contingency plans because we recognize that each urbanized area's plan must be designed to meet unique local conditions. (See p. 1.) We believe that it is necessary to review these plans so that the types of problems described on pages 22 to 28 can be resolved before an emergency occurs. The individual strategies and approaches to be included in these plans would depend on the needs and preferences of the urbanized area, but DOT's review would help to ensure that those strategies selected could actually be implemented to respond to an energy shortage.

DOT agreed that it would be useful and appropriate to provide criteria to assist urbanized areas in preparing contingency plans, but pointed out that it would be unwise and counterproductive to overspecify the criteria. Because contingency plans must be tailored to local conditions, we agree that it would be unwise to overspecify the criteria, but we still believe that it

is important to develop minimum criteria that need to be met. While it would be inappropriate for DOT to specify exactly what strategies should be included in a contingency plan, it should establish a minimum level of preparedness for all urbanized areas. This could take the form of specifying that the contingency plans should be designed to respond to a gasoline shortfall of a stated percentage. Criteria could also be developed for the time needed to implement the planned contingency actions so that the necessary preparatory work will be done to allow particular strategies to be implemented in a timely manner. While DOT has distributed a large amount of information on contingency planning, it has not pointed out how this information should be used. As an example, DOT has distributed several of the first contingency plans developed, but it did not evaluate these plans to show which plans were good or bad, what obstacles must be overcome to implement the planned actions, what benefits would be achieved by implementing the contingency actions, or whether the same benefits could be achieved by other, lower-cost actions.

DOT also agreed that contingency plans should be coordinated with and support State emergency energy conservation plans but stated that it does not believe the Federal Government should provide specific guidance as to the means to accomplish this. We agree and have revised our recommendation. As discussed on page 15, there is a need for better coordination of the contingency planning activities of DOT and DOE since they have slightly different objectives and involve different agencies at the State level. We did not intend that DOT prescribe how specific contingency strategies in the local contingency plans should be coordinated.

DOT believes that the report underestimates transit's utility in providing for work and other essential travel during energy emergencies. We stated in the report (see p. 16) that transit operators are essential participants in regional contingency planning. We believe, however, that it is important to point out the limitations of transit contingency strategies, particularly in view of the fact that so many urbanized areas do not yet have regional contingency plans. In addition, because many transit systems are already operating above capacity during peak rush periods, we believe that they are limited in the actions that could be taken to carry large numbers of additional riders unless they add equipment and personnel. We therefore believe it is practical to consider using less costly alternatives, such as alternative work-hour and ridesharing programs, before adding equipment and personnel to increase transit operations.

Seattle transit operator

The Seattle transit operator was concerned that the report (1) did not give proper recognition to the leadership shown by

transit operators in developing contingency plans and (2) did not adequately emphasize the role transit must play in meeting emergency transportation needs. While we agree that transit operators do deserve credit for taking the lead in contingency planning, we believe that the draft report adequately recognized in chapter 1, which the transit operators did not have an opportunity to review, that transit operators, including Seattle's, were among the very first to undertake contingency planning. (See p. 6.) In addition, in chapter 2 we also pointed out that in six of the seven areas reviewed, the transit operator had prepared a contingency plan while the MPOs in only two of the seven areas had done so. (See p. 10.) Regarding the role of transit in meeting emergency transportation needs, we explained our reasons for pointing out the limitations of transit contingency strategies in our response to DOT above. Furthermore, while Seattle may have the potential to increase capacity without adding additional equipment, this was not true for many other areas reviewed.

The Seattle transit operator also made a number of suggestions to reflect changes that have occurred since we completed our work. We have incorporated this additional information where possible.

## ORGANIZATIONS INVOLVED IN TRANSPORTATION ENERGY CONTINGENCY PLANNING IN URBANIZED AREAS REVIEWED

| | Los Angeles CA | Chicago IL | Washington DC | Baltimore MD | Seattle WA | Portland OR | Eugene OR |
|---|---|---|---|---|---|---|---|
| Data on the urbanized areas from the 1970 census: | | | | | | | |
| Rank nationally | 2 | 3 | 8 | 14 | 17 | 28 | 141 |
| Population (millions) | 8.4 | 6.7 | 2.5 | 1.6 | 1.2 | 0.8 | 0.1 |
| Land area (sq. miles) | 1,571.9 | 1,277.2 | 494.5 | 309.6 | 413.1 | 266.8 | 55.3 |
| Metropolitan planning organization (MPO) | Southern California Association of Governments | Chicago Area Transportation Study Policy Committee (CATS) | Metropolitan Washington Council of Governments (COG) | Regional Planning Council | Puget Sound Council of Governments | Metropolitan Service District | Lane Council of Governments |
| Transit system operators (with vehicle requirements for peak service from DOT's August 1980 directory of public transportation services) | Southern California Rapid Transit District<br>-2,006 buses<br>Smaller systems (including Orange County Transit District with 296 buses)<br>- 755 buses | Regional Transportation Authority (RTA) (under contract)<br>-898 commuter rail cars<br>-622 buses<br>Chicago Transit Authority<br>- 888 rapid transit cars<br>- 2,154 buses | Washington Metropolitan Area Transit Authority<br>- 238 rapid transit cars<br>- 1,582 buses<br>Other transit systems in the metropolitan area<br>- 220 buses<br>- 47 commuter rail cars | Mass Transit Administration (MTA)<br>- 868 buses | Municipality of Metropolitan Seattle<br>- 34 trolley coaches<br>- 726 buses | Tri-County Metropolitan Transportation District (Tri-Met)<br>- 475 buses | Lane County Mass Transit District<br>- 55 buses |
| Rideshare coordinator | Commuter Transportation Services, Inc. | CATS and RTA | COG | MTA | Seattle/King County Commuter Pool | Tri-Met | City of Eugene |
| State transportation agency | California Department of Transportation | Illinois Department of Transportation | D.C. Department of Transportation<br>Virginia Department of Highways and Transportation<br>Maryland Department of Transportation | Maryland Department of Transportation | Washington State Department of Transportation | Oregon Department of Transportation | Oregon Department of Transportation |
| State energy agency | California Energy Commission | Illinois Institute of Natural Resources | D.C. Energy Unit | Maryland Energy Office | Washington State Energy Office | Oregon Department of Energy | Oregon Department of Energy |



APPENDIX I

APPENDIX II

U.S. Department of Transportation
Office of the Secretary of Transportation

Assistant Secretary for Administration

400 Seventh Street, S.W.
Washington, D.C. 20590

April 9, 1981

Mr. Henry Eschwege
Director, Community and Economic
Development Division
U.S. General Accounting Office
Washington, D.C. 20548

Dear Mr. Eschwege:

We have enclosed two copies of the Department of Transportation's (DOT) reply to the General Accounting Office (GAO) draft report, "Contingency Planning Is Inadequate To Meet Commuter Transportation Needs During Future Gasoline Shortages," dated March 4, 1981.

We believe that the report does not provide a context for assessing the status of urbanized areas' energy contingency plans for worktrips. It does not reflect the impacts of recent policy decisions removing Federal petroleum price and allocation controls and transferring energy programs to other levels of government or to the private sector. DOT opposes the recommendation for Federal review and/or approval of urbanized areas' transportation energy contingency plans in order to achieve greater national uniformity.

While the Department agrees that there is a need for greater coordination between State and urbanized area energy contingency plans, we believe that prescriptive Federal involvement would be counterproductive. DOT believes that State, metropolitan, and local agencies should have greater discretion in tailoring their use of Federal funds to fit their values, conditions, and institutions. Accordingly, DOT opposes categorical funding for energy contingency plans.

We agree that the Federal Government might appropriately provide more information on potential petroleum and gasoline shortfalls. DOT has already provided such information to State, metropolitan, and local agencies, and the Department of Energy (DOE) has indicated a number of possible Federal actions in the event of any future energy supply interruptions.

If we can further assist you, please let us know.

Sincerely,

Robert L. Fairman
Acting

Enclosures

APPENDIX II

DEPARTMENT OF TRANSPORTATION REPLY

TO

GAO DRAFT REPORT OF 4 MARCH 1981

ON

CONTINGENCY PLANNING IS INADEQUATE TO MEET COMMUTER TRANSPORTATION NEEDS DURING FUTURE GASOLINE SHORTAGES

## SUMMARY OF GAO FINDINGS AND RECOMMENDATIONS

GAO indicates that the Department of Transportation has taken a number of steps to encourage metropolitan and local agencies to develop transportation energy contingency plans to enable commuters to maintain their mobility in terms of travel to and from work in the event of a future petroleum shortage. However, GAO asserts that few urban areas have prepared adequate contingency plans which would significantly help to meet the transportation needs of commuters during future fuel shortages. GAO states that progress toward the development of contingency plans has slowed down in many areas since the 1979 shortages as metropolitan planning organizations and local governments have turned their attention to more urgent matters. GAO indicates that new efforts by the Congress and by the Department of Transportation are needed to spur areas to complete development of contingency plans and to improve plans already developed so that all areas would be better prepared to respond to commuters' transportation needs in the event of a future petroleum shortage.

GAO recommends Congressional action to support the need for transportation energy contingency planning at the urbanized area level. GAO states that such Congressional action might take the form of:

- a Congressional resolution or oversight hearings to support DOT efforts with an explicit expression of the Congress' interest in such planning,
- funding communities or regions to prepare contingency plans and means to implement them, or
- requiring DOT approval of a regional transportation energy contingency plan as a condition for receipt for any Federal transportation assistance.

GAO also recommends that the Department of Transportation:

- work with DOE to develop specific information on potential shortfalls of petroleum supplies and their impacts on the availability of gasoline to motorists, and provide more information to planners on the range of shortfalls for which they should be developing contingency actions and the Federal actions that could be expected for given shortages,

- develop specific criteria on what contingency plans should contain, what types of strategies are appropriate for each level of energy shortfall, and the acceptable periods of time needed to implement contingency actions,

- provide specific guidance on how regional contingency plans should be coordinated with and support State emergency energy conservation plans, and

- establish a required review process for all contingency plans developed using DOT funding and develop procedures to inform metropolitan planning organization on inadequacies in their planned strategies and assist them in correcting their plans.

## SUMMARY OF DEPARTMENT OF TRANSPORTATION POSITION

DOT believes that the draft report does not provide a context for assessing the status of urbanized areas' energy contingency plans for worktrips. It does not reflect the impacts of recent policy decisions removing Federal petroleum price and allocation controls and transferring energy programs to other levels of government or to the private sector. DOT opposes the recommendation for Federal review and/or approval of urbanized areas' transportation energy contingency plans in order to achieve greater national uniformity. DOT believes that these plans should be tailored to the values, conditions, and institutions of the jurisdictions involved if they are to be effective. While DOT agrees that it would be useful and appropriate to provide criteria to assist metropolitan planning organizations, local governments, and transit operators in the preparation of contingency plans, we believe that it would be unwise to overspecify such criteria. While DOT agrees that there is a need for greater coordination between State and urbanized area energy contingency plans, we believe that prescriptive Federal involvement would be counterproductive. DOT believes that State, metropolitan, and local agencies should have greater discretion in tailoring their use of Federal funds to fit their values, conditions, and institutions. Accordingly, DOT opposes categorical funding for energy contingency plans. While DOT agrees that transit is not a panacea in responding to an energy shortfall, we believe that it has a significant role to play, particularly if it is combined with other supportive or complementary measures. DOT agrees that the Federal Government might appropriately provide more information on potential petroleum and gasoline shortfalls. However, DOT has already provided such information to State, metropolitan, and local agencies and DOE has indicated a number of possible Federal actions in the event of any future energy supply interruptions.

POSITION STATEMENT

Context

The draft report fails to provide a context for assessing the status of urbanized areas' energy contingency planning for worktrips. It should mention the Administration's stated policies of transferring numerous energy programs to other levels of government or to the private sector, of removing unnecessary or excessive regulatory burdens in the energy field, and of permitting market forces to induce energy conservation and efficiency. The President's decision to remove all remaining Federal price and allocation controls on U.S. crude oil and on petroleum products is already contributing to increased energy efficiency and conservation. The Department of Energy has suggested that the President's decision also "may now provide sufficient assurance of an orderly adjustment to any future energy supply interruptions," except, perhaps, in the event of severe shortfalls. DOE has also indicated that "any number of conservation measures might be activated if essential to managing any severe emergency supply shortfall."

The draft report also fails to provide a context in terms of Federal and State energy contingency plans. It should describe the processes for developing and implementing the Federal and State Standby Emergency Energy Conservation Plans under the provisions of the Emergency Energy Conservation Act of 1979. It should describe the processes for preparing and implementing State Energy Conservation Plans under the provisions of the Energy Policy and Conservation Act of 1975. It should examine the potential for conserving fuel and preserving mobility during petroleum shortages in non-worktrips in view of the fact that worktrips account for less than one-third of all trips or vehicle-miles.

Federal Review and Approval

The draft report recommends that the Department establish a required review process for all DOT-funded contingency plans. It indicates that the Congress may wish to require DOT approval of an urbanized area's contingency plan as a condition for receipt of any Federal transportation assistance.

DOT strongly opposes any attempt to impose national "uniformity" in the scope, content, and processes of transportation energy contingency plans prepared by urbanized areas. If these plans are to be effective, they must be tailored to local values, conditions, and institutions. If contingency plans are to be relevant, they must reflect serious local interest and concern and not merely satisfy a Federal planning requirement. Also, requiring DOT approval of energy contingency plans as a condition for receipt of Federal transportation grants would elevate contingency plans to a unique status.

Specific Criteria

The draft report recommends that the Department develop specific criteria for the contents of contingency plans, for the appropriate strategies for each level of energy shortfall, and for acceptable time periods for implementation of contingency measures.

DOT agrees that it would be useful and appropriate to provide criteria to assist metropolitan planning organizations, local governments, and transit operators in the preparation of contingency plans. DOT has been involved for some time in advancing the state-of-the-art of urbanized areas' transportation energy contingency plans, in disseminating information on such planning through written materials, workshops, and technical assistance, and in encouraging metropolitan and local transportation agencies to undertake such planning. In particular, DOT funded prototype energy contingency planning studies in Dallas-Fort Worth and in Kansas City, beginning prior to the petroleum shortfall occasioned by the Iranian revolution. Also, DOT contracted with the Massachusetts Institute of Technology for reports on transportation energy contingency planning processes and strategies; the substance of the MIT reports is reflected in the draft report. Moreover, DOT contracted with Peat, Marwick, and Mitchell for an assessment of Federal, State, and local responses to the 1979 petroleum shortfall; this report provides considerable information on the effectiveness of various transportation energy contingency strategies.

Nevertheless, the Department believes that it would be unwise and counterproductive to overspecify criteria for urbanized area contingency plans. For example, while DOT may wish to indicate the types of measures to be considered for inclusion in a contingency plan, it should not dictate "what should be included in a contingency plan."

Coordination

DOT agrees with GAO's point that metropolitan and local transportation agencies are generally in the best position to plan and implement demand reduction and mobility maintenance actions. For this reason, DOT has targeted its transportation energy contingency planning efforts toward metropolitan planning organizations, local governments, and transit operators. DOT also agrees that such plans "should be coordinated with and support State emergency energy conserva-tion plans." However, we do not believe that the Federal government should "provide specific guidance" as to the means to accomplish this coordination and support. Clearly, State, metropolitan, and local transportation agencies are capable of coordinating efforts to use school buses during petroleum shortages without the prescriptive Federal involvement suggested by the GAO report.

Funding

The draft report indicates that the Congress may wish to make funding available to communities or regions for developing contingency plans and for preparing to implement them. DOT opposes categorical funding for urbanized areas' transportation energy contingency planning on the ground that metropolitan and local agencies should have greater discretion in tailoring their use of Federal funds to fit the values, conditions, and institutions in the jurisdictions involved.

APPENDIX II



Transit

The draft report emphasizes the limitations on transit in responding to petroleum shortfalls. DOT believes that transit's utility in providing for work and other essential travel during energy emergencies has been significantly underestimated. Most of the available evidence argues for a complementary ridesharing program rather than against the use of transit. Moreover, if combined with alternative work schedules, bus rehabilitation, bus stockpiles, or the use of school or charter buses, transit may provide a significant energy contingency resource in many urbanized areas.

Information

The draft report recommends that the Department should work with DOE to develop specific information on potential petroleum and gasoline shortfalls and should provide more information to local planners on the ranges of potential shortfalls and on the Federal actions to be expected in the event of given shortfalls. DOT's current guidance does suggest four alternative shortfall levels for contingency planning purposes. However, the Department has no objection to furnishing additional information on potential shortfalls and will investigate this matter with DOE.

With respect to likely Federal actions, DOE has already indicated that price increases may result in orderly adjustments to any future energy supply interruptions. DOE has also indicated its intention to retain the public information and minimum automobile fuel purchase measures in the Standby Federal Emergency Energy Conservation Plan. Accordingly, metropolitan and local agencies should proceed on these assumptions in their urbanized area transportation energy contingency planning activities and should not wait for additional information on likely Federal actions.

APPENDIX III

**Department of Energy**
**Washington, D.C. 20585**

APR 9 1981

Mr. J. Dexter Peach, Director
Energy and Minerals Division
U.S. General Accounting Office
Washington, D.C. 20548

Dear Mr. Peach:

The Department of Energy (DOE) appreciates the opportunity to review and comment on the General Accounting Office (GAO) draft report entitled: "Transportation Contingency Planning is Inadequate to Meet Commuter Needs During Future Gasoline Shortages." DOE agrees that advance planning efforts by regional and local agencies and organizations will better enable them to meet their commuter transportation needs during future oil supply disruptions. In particular, these organizations could provide valuable public information and education to promote improved trip planning, driving behavior and maintenance practices.

DOE has consistently recognized the value of assisting regional organizations in transportation contingency planning. Information and analyses resulting from these past and current DOE efforts could be of use in future local and regional planning. A partial, descriptive listing of these efforts is enclosed.

DOE concurs in GAO's recommendation that DOE work closely with the Department of Transportation (DOT) in connection with regional transportation contingency planning. Indeed, DOE and DOT have already engaged in a number of cooperative efforts relating to metropolitan planning organizations and commuters. For example, the two departments have funded jointly a project to enable the North Central Texas Council of Governments to integrate energy efficiency considerations into its transportation contingency planning process. A number of similar joint projects are in the final stages of review by the two departments.

DOE will continue to coordinate with DOT in the preparation for future energy shortages affecting regional transportation needs. DOE appreciates GAO's consideration of these comments in the preparation of the final report and will be pleased to provide any additional information GAO may desire in this matter.

Sincerely,

for P. Marshall Ryan
Controller

Enclosure

APPENDIX III

## SELECTED DOE ACTIVITIES IN CONNECTION WITH TRANSPORTATION CONTINGENCY PLANNING

Employer Based Commuter and Travel Plan, Economic/Regulatory Impact Analysis and the Operational Concepts Report: Analyses of the operational and economic impacts of employer-based strategies to cope with shortages (July 1980).

State Level Emergency Motor Fuel Conservation Actions: A review of possible State and metropolitan actions to restrain demand (July 1980).

Coping Handbook: A review of means to maintain mobility during a shortage (to be completed during 1981).

Workshops on the Preparation of State Contingency Plans: Workshops aimed primarily at State level energy and transportation planners to provide a background and techniques for plan preparation (completed in the fourth quarter of 1980).

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