

National Policy Issues and Possible Initiatives

This final chapter draws upon the results of the analysis reported in the previous chapters, to present a discussion of national policy issues and initiatives appropriate to energy, the economy, and mass transit.

The discussion of policy initiatives in this chapter has three parts:

(I) Options within the framework of current UMTA and Related Programs. This contains a discussion of the types of actions that can be taken within the framework of the existing UMTA program to effectively respond to potential future energy shortages and/or economic downturns. Consideration is given to four basic types of actions which can be taken:

- Changes in funding! levels and distributions among program categories
- Changes in statutory and administrative regulations
- Adoption of special incentives
- New emphases in planning activities

(z) Possible New Initiatives.—A discussion of what Congress might consider beyond the scope of the present UMTA program to achieve substantially increased transit ridership, to conserve oil and other forms of energy, to achieve economic objectives and other national goals related to public transportation. The initiatives considered include:

- No fare and reduced fare transit
- Direct use of substantial new gasoline taxes to support major new transit initiatives
- Use of parking taxes to encourage a substantial shift to transit where feasible
- Doubling of transit operations within the near future
- Initiatives within the highway program to give priority to transit,

(3) Long-run Considerations.—A discussion of the potential energy, economic, and environmental

benefits achievable in the long run if new transit and other transportation initiatives are directly linked with (as distinct from coordinated with) land development controls and community development programs. Mechanisms for achievement of these benefits are discussed.

Options Within the Framework of Current UMTA and Related Programs

There appear to be four types of potential Federal initiatives within the present public transportation program framework: (1) changes in funding levels and distributions among program categories; (2) changes in statutory and administrative regulations; (3) adoption of special incentives; and (4) new emphases in planning activities.

(I) Changes in Funding Levels and Distributions Among Program Categories. From the standpoint of UMTA'S ability to approve grants and disburse funds within the existing program structure, there is little possibility for major increases in the rate of spending for capital grants until F.Y. 1978 or possibly even F.Y. 1979 in view of the large carryover of unused authorizations. Any immediate increases in authorization over what is now provided by law should be coupled with congressional action which would significantly simplify UMTA'S administrative requirements.

The major change in distribution of funds which might be considered within the near term would be an increase in the statutory allocation to the Formula Grant funds which may be used for either capital or operating assistance. Indications are that the national level of demand for these funds for operating assistance will exceed the authorized levels easily for both F.Y. 1976 and 1975 at 50 percent matching.¹ Although the agency is just learning how to administer this new fund, the time requirements for disbursing these funds would not be increased if the amount distributed by formula was substantially increased,

¹ Authorized Federal funds for Formula Grants for F.Y. 1975 through 1980 are, in millions: \$300, \$500, \$775, \$850, and \$900.

A major change which would accelerate the flow of funds would be either an across the board reduction in local matching ratios or authorization for UMTA to reduce the local match under specified conditions. This will be considered further below under "Adoption of Special Incentives."

A permanent reduction in the 50 percent match for Formula Grants would escalate the issue of Federal versus State-local responsibilities for the scope of subsidized operations. However, a temporary reduction in the local match would provide a quick means of meeting new transit demands,

(2) **Changes** in Statutory and Administrative Regulations. The present limitation on maximum state participation in national funds is 12-1/2 percent. Several States could have need for capital grants in excess of this limit at particular times over the next several years.

A requirement which has been a problem for some smaller metropolitan areas making simple applications for bus purchases, etc., has been the need to demonstrate the existence of a continuous and coordinated comprehensive planning process. This is likely to be a problem again for many small cities as they now seek participation under the new Formula Grant program. UMTA could be authorized to waive this provision for small urban areas for simple actions such as the purchase of a few buses or for operating assistance.

UMTA should also be allowed to waive the requirements for public participation in the planning process and for the entire EIS process in cases involving no substantial construction or increase in the size of the bus fleet. If the transit operator serves only the central city it might be feasible to forego the A-95 coordination,

The above liberalizations would speed up projects, particularly in areas under 250,000 population where there is little experience or need for such planning and review requirements.

UMTA could be given authority to make these waivers for larger areas during emergency situations such as the oil crisis. However, experience indicates that the larger the area, the greater the need for the present planning requirements. The waiver should be based on evidence that a provision of the law is restrictive under emergency circumstances.

The present highly centralized structure of UMTA is frequently cited by transit planners and operators as an important and unnecessary cause of delays in implementing programs. It is wasteful to have virtually all routine approvals made in

Washington, which is now the case. The program could be significantly accelerated by increasing the competence of field office staff, using FHWA field personnel in many instances, and delegating a large proportion of decision-making responsibility to them, including, for example, most contract approvals, action on operating subsidy grants, and capital grant applications involving bus purchases and other moderate size facilities not involving commitment to the construction of new fixed guideway routes, FHWA has operated this way for many years.

(3) Adoption of Special Incentives. By use of powers to waive some portion of the local match in return for adopting objectives which Congress believes should have a high priority, UMTA could break some local bottlenecks, accelerate desired improvements, or provide incentives for actions which would not otherwise be taken.

A wide array of actions which can be taken to increase ridership on transit were reviewed. Most could be applied immediately if the necessary incentives were offered, such as the reduction of local matching funds. The fact that the current Formula Grant program's local match requirement is so high (50 percent) provides a good opportunity to achieve desired national objectives through the incentive of increasing the Federal share for any projects which meet specified criteria which are otherwise hard to achieve. A change in the law would be required to permit UMTA to lower the local matching requirement. UMTA would need policy guidance from Congress on criteria to be used.

One desirable response to a severe fuel shortage would be an extension of coverage by use of innovations such as "paratransit" (e.g., jitneys) and "demand-responsive" or "Dial-A-Ride" services. A major cause of the slowness in adopting these innovations have been the institutional blocks. Once the incentive policy is accepted it can be used to obtain such ends as the use of existing operators (taxis, limousine services, and transit operators) to provide jitney services *instead of fighting* them.

At the opposite end of the service scale are large capital projects for grade-separated modes. The initiation of these projects has been hampered by State-local financing requirements—e.g., bond issues which must be passed by several jurisdictions. Where plans were already fully adopted UMTA could often avoid these bottlenecks by raising the Federal share.

(4) New Emphases in Planning Activities. All metropolitan areas should prepare emergency fuel conservation plans, such as the Washington, D.C. effort. More detailed planning would be desirable in most cases. The plan should emphasize obtaining the maximum short-run increases in effective public transportation capacity with available public and private vehicles.

Fortunately the evolution in understanding of the proper role for transportation planning has recently been toward greater emphasis on short-term planning—greater concentration on the resolution of current issues and on an incremental approach to planmaking. There is also growing awareness that important transit benefits can be obtained relatively quickly and at low cost through traffic engineering and traffic regulatory measures, particularly those which give priority to bus operations. Also many metropolitan areas have outmoded route structures which are in need of complete reassessment, making use of new concepts and tools to provide greater efficiency and quality of service. UMTA is beginning to encourage this type of planning. Substantially more planning funds can be devoted to these types of activities which will have much greater near-term payoff and which will provide transit operators with a much greater capacity to respond to a future energy crisis or other emergencies.

If the time horizon is extended beyond 5 years there are compelling arguments for acceleration of planning work. Most urban areas do not have up-to-date comprehensive, coordinated plans based on recent, high quality ridership and traffic surveys. Additional funds could effectively be made available to reevaluate out-of-date transportation plans and to creatively develop plans which make better use of new understanding which has been gained in the last few years. This could be done by making available between one and two dollars per capita per year for every area with the expectation that this rate of expenditure could be productively utilized in most metropolitan areas within a relatively short period—about \$150 to \$300 million per year nationally.

As discussed in the final portion of this section, there are convincing arguments that a major reorientation of suburban and exurban land development patterns and trends should take place. Achievement of more orderly, coherent land development will require widespread changes in views on the future forms of land use by all levels of government. Any broad consensus will require

several years to evolve and this type of planning research is greatly needed in each major metropolitan area to assist in shaping that consensus.

The Potential Applicability of the Above Actions to Near Future Economic and Energy Alternatives

(1) Economic Recession. Under this condition the economy is expected to begin recovery within the very near future. Increases in the rate of expenditures will require much more time for their effects to be felt in terms of creation of jobs because of the time requirements involved in grant approvals, project planning and engineering, etc. Hence the discussion becomes more applicable to future recessions.

Some moderate effects in creating jobs could begin to be felt within perhaps 6 months of a decision to increase the amount of Formula Grant funds so that the level of transit operations could be significantly increased, thereby creating more jobs for drivers, mechanics, etc. About 80 man-years of employment will be generated for each million dollars.

A policy of increasing UMTA expenditures for transit operations as opposed to capital improvements has two important advantages as an anti-recessionary policy:

- Its effect will be felt much more quickly. Once the program is in full operation it will be possible to affect employment through increases in operating assistance expenditure rates within perhaps as little as a single quarter.
- Because of the difference in matching ratios, the Formula Grant program can theoretically result in 60 percent greater impact for each Federal dollar spent than the Discretionary Grant Program. (This is somewhat of an exaggeration of the difference in effect because of the fact that local matching funds will tend to be partially shifted from other jobs creating expenditures rather than from net increases in expenditures.)

(2) Economic Depression. Since we are already well into a deep recession, which appears to have bottomed out in the third quarter of 1975, the needed response would be short run in character, with results required before mid-1977. Within this time frame the flow of Formula Grant funds could

effectively be increased substantially, either through additional transfers into the Formula Grant authorization or a reduction in the present 50 percent matching ratio requirement with an offsetting increase in the total Federal program level.

The types of special incentives discussed under "Changes in Statutory and Administrative Regulations" should be considered,

If the depression were to have the potential for running beyond 1977 as assumed in our worst case analysis, then the acceleration of capital grants could begin to have significant impact on employment in several metropolitan areas and in equipment supplying industries, but only if a policy of lessening Federal requirements were enunciated and energetically pursued along the lines discussed.

(3) Economic Recession Plus Mild Energy Decrease. Same as Economic Recession above.

(4) Recession Plus Moderate Energy Decrease. Same as Economic Recession plus application of the first special incentive—fostering expansion of ubiquitous, low capital cost, low capacity transportation systems in areas with little or no existing transit service. Jitney and Dial-a-Ride services on a scale proportionate to demand should make it much more practical to cope with significant reductions in private auto trips. Efforts should concentrate on the heavier, more aggregated trip flows where it would be most efficient to provide a good quality of substitute public service.

(5) Depression Plus Severe Energy decrease. This will place the maximum demands on the program. The Severe Energy Decrease, if introduced in the present period of recession, would lead to depression, and the length of the period of distress would be significantly longer than for the other alternatives so that long term considerations become more important. The present UMTA program framework could still be utilized but the overall funding levels should be substantially increased. UMTA'S speed and effectiveness of administrative action would have to be improved immediately to cope with increased program levels.

It would be desirable to implement three of the modifications to the present UMTA program outlined above: (a) reduce local matching shares, both capital and operating funds, (b) increase the relative proportion of all funds going to operating assistance, and (c) remove some of the constraints such as the maximum state participation ratio, the planning requirements for operating assistance and small capital expenditures for rolling stock

purchases, and various project planning process requirements.

Special incentives should be adopted as described for increasing the coverage of transit services and for accelerating the start of major fixed investment systems.

The longrun implications of this most drastic of the alternatives call for a major, immediate effort to revise areawide transportation plans and to evaluate alternative land use transportation configurations and implementation measures.

Possible New Initiatives

The preceding discussion can be characterized as cautious because it asked only what might be done within the framework of the existing UMTA program to address potential problems. This section, by contrast, will explore several of the most promising initiatives that Congress might take beyond the current commitment to transit. This discussion assumes that it is preferable to take positive action now to reduce energy consumption and to increase transit ridership, rather than to merely be prepared to accommodate future emergencies when they occur.

Analysis shows that current policy will not result in energy conservation and will not result in any dramatic increases in transit use. A continuation of current policy, when viewed from an overall national perspective, will probably result in an approximate stabilization of transit's proportionate role in urban transportation. Unless there are future substantial energy shortages, automobile use will grow at roughly 3 percent or more per year. Transit systems will be improved in amenity level, but the overall extent of service will not change very much in percentage terms, nor will average transit fares as a whole. Thus transit improvements will be just sufficient to prevent further significant decline in patronage, but not enough to change transit's competitive position with respect to the auto/highway system.

Analysis also shows that there is a wide variety of actions that can be taken which can improve transit ridership and/or decrease energy consumption. Their effectiveness varies widely. Out of a large number of potential actions analyzed most actions are not likely to affect as much as a ten percent increase in ridership nationally and none could individually result in a doubling of transit use over the next 5 years. However, the most ambitious and

effective actions could result in reaching and even exceeding the doubling of ridership benchmark if the actions are taken in combination with each other. Many of the actions when taken alone cause problems which can be offset by other actions considered.

The attractiveness of combining different major policy actions is, in fact, one of the major findings of this analysis. There are several aspects of this finding regarding the complementarity of different actions which will be brought out in the consideration of each of the more important policy actions below:

No Fare and Reduced Fare Transit. Moderate success in keeping fares down or achieving reductions has been achieved recently. The long term rate of increase in fares has been reduced to about the inflation rate or less. Making funds available for operating assistance will probably assure a stabilization of fares, over the next few years perhaps even in constant 1975 dollars—i. e., generally keeping the same cash fare despite inflating costs.

The NMTA Act of 1974 authorized \$20 million per year for 2 years for no fare demonstrations in several cities, but no funds have been appropriated and none have yet been requested by UMTA.



Advertising 13us f-are Reduction On Tickets in Denver, Colorado

There may be a lack of recognition of the costs involved. The \$20 million per year will not cover areawide no fare transit demonstrations except in the smallest metropolitan areas. It would cost several times that amount for the Washington, D.C. metropolitan area alone.

If there were no new **ridership**, no fare transit would have cost about \$3 billion in 1974 nationally. About a 60 to 80 percent **ridership** increase could be expected, however, raising the cost of no fare transit to about \$5 billion per year in 1974 dollars if it is

assumed that transit operations would be increased to hold load factors approximately constant.

No fare transit in the offpeak periods only would cost substantially less—roughly one billion in 1974 dollars over current levels of operating assistance, and would provide many of the benefits of round-the-clock no fare transit,

No fare transit would produce the largest increase in transit ridership of any action that has been considered. Additional advantages of such an action include:

- Greater increases in offpeak ridership and therefore better utilization of manpower and equipment. This would be particularly true of an offpeak no fare program,
- Compared to most of the other actions considered, it could be implemented relatively easily on a national basis through Congressional action.
- Benefits would generally be greatest among those most in need of increased mobility—the young, the elderly, the poor, and many of the handicapped. Offpeak no fare transit would concentrate the benefits among these groups to an even greater extent.
- It would necessarily result in improvement of service, in part because it would do away with the inconvenience to users of having to have exact change, and in part because it would permit faster transit operations.
- The increase in ridership resulting from no fare in peak periods would require a 30 to 50 percent increase in transit operations thereby causing substantial increases in frequency and coverage of transit service—in itself one of the most effective actions which can be pursued. On the other hand an offpeak no fare program could be implemented without requiring increases in the transit fleet,
- No other action could produce such large scale results so quickly. Capital investment in rapid transit systems in the same order of magnitude (\$5 billion/year) could probably produce similar ridership increases, but probably not within 10 to 15 years,

On the negative side, such a policy would be difficult to reverse—one good reason for demonstrations before making a national commitment.

Another objection is that unnecessary, frivolous travel will be encouraged causing unjustified public costs. To some extent this may happen, but limited experience indicates it would not be a serious problem. Frivolous use of transit is not likely to occur in peak periods when crowding might occur. Reduction of fares to low values (e.g., 10cents to 25cents) might accomplish much of the objectives of a free fare program while limiting these problems.

A third negative argument is that other types of public transit improvements are more effective in achieving the same objectives. This has much validity within a limited framework. Various types of service improvements can be more cost effective when the service improvements can be made at moderate marginal cost and in areas where demand is very sensitive to the level of service. However, there are many conditions under which it is more cost effective to lower or eliminate fares than to improve service. This occurs, for example, when costs of improving service are very high such as when it would be necessary to construct grade-separated rapid transit in order to improve service. It occurs also when service improvements will yield few additional riders because the level of service is already quite good, or when fares are very high. Fare reduction or elimination is also most cost effective in lower income areas. When considering very major potential investments in transit, many of these diminishing returns come into play.

More importantly, the combination of service improvements and fare reductions becomes quite clear when considering major improvements. Fare reductions without service improvements will cause greater crowding and hence make service improvements critical. Similarly, service improvements alone will effectively attract higher income transit users but will have little influence on lower income potential users if fares are high.

A no fare or substantially reduced fare program nationally would probably have to involve a higher Federal matching ratio than the current 50 percent. At that matching ratio, State and local governments would have to increase their subsidy for transit operations by about \$2-1/2 billion to cover the full cost. They almost certainly would not, or could not do so. An increase to 80/20 matching, such as now used for the regular capital grant program, would approximately pay the total operating cost of a national no fare transit program (about \$5 billion) with no substantial increase from the 1974 amount that State and local governments put into operating

assistance. To cover the Federal share of an 80/20 no fare program an increase of the Formula Grant funds would be required (currently \$300 million, increasing to \$900 million by 1980) to about \$4 billion per year. A considerably lower Federal matching ratio and dollar amount would be sufficient to attract most metropolitan areas to a no fare program. As noted previously an offpeak no fare program would cost about one billion dollars per year over current operating assistance levels.

Something less than a complete national no fare program is likely to be justified by a careful cost effectiveness analysis. Offpeak free fares will affect ridership more and will benefit disadvantaged groups relatively more than peak period free fares. It would also encourage staggering of work hours, better utilization of equipment, and a reduction of capital requirements for increased rolling stock.

Demonstrations must be carefully planned, because they will be costly and because of the complexities of the research that is needed.

Origin-destination (OD) surveys should be taken before and during the experiment. OD surveys should probably involve onboard surveys, followed by indepth home interview surveys for relatively small subsamples of riders. Changes in travel habits should be carefully assessed including new trips not previously made as well as all changes in trip patterns. The demonstration should last at least a year to allow habits to change; the full effects will actually take longer to be felt through decisions on auto purchases, residential location, etc.

Consideration should be given to dividing a metropolitan area up into pie-shaped wedges differing as to fare policy. The service areas might include each of the following: (a) no fare at all, (b) offpeak no fare, (c) one or more low fares, and (d) no reduction. This could be difficult for local officials to do politically and may even be difficult for UMTA to achieve,

Use of **Gasoline** Taxes To Support Major New Transit Initiatives. The 50 percent gas tax (about 30cents gal.) analyzed would have far greater effect on oil consumption than any other action analyzed—about ten times as much effect as packages of ambitious pure transit incentive actions. It would have relatively little effect on transit ridership because gas price increases tend to have more effect on the long term fuel economy of autos than on short term “travel behavior. Nonetheless, this rather modest effect on transit ridership is fully complementary

with other actions such as transit fare reductions and expansion of transit service.

The most important potential relationship between a major gasoline tax and transit, however, is not the effect on ridership but the potential it has for financing transit incentives.

A 30cents gasoline tax would generate roughly \$12 billion/year nationally, taking into account the effects of the tax in reducing auto travel.

There has been a great deal of resistance to the application of gas taxes in this order of magnitude, based largely on the burden it would cause low and moderate income households who are dependent on automobile transportation for essential travel. This burden could be alleviated by selective tax rebates, as has been seriously proposed in draft legislation.

What may not have been widely recognized, however, is the direct substitutability of transit **within** metropolitan **areas**, particularly if transit substantially improved.

A comprehensive legislative action might involve financing of some of the major new transit initiatives considered here from a major new gas tax that would affect only residents of metropolitan areas. To avoid the problems that would be caused by vastly differing retail prices from place to place, the tax could be applied nationwide but full (or partial) rebates of new fuel taxes could be provided to all residents of nonmetropolitan areas and to all with low or moderate incomes.

A 30cents **gas tax** applied to residents of metropolitan areas would generate roughly \$8-1/2 billion annually. Half of this amount, over \$4 billion, should be sufficient to finance the Federal share of a major transit incentive program of the scale analyzed. Only about 4cents per gallon tax would be required to finance an offpeak no fare program.

One simple mechanism to achieve a program of this type would be through the existing Highway Trust fund, channeling the funds added by the tax increase to the urban system program; comparatively moderate changes in the structure of the law would be required to achieve this.

Use of Parking Taxes to Encourage a Substantial **Shift to Transit Where Feasible**. Selectively applied parking taxes could be one of the most effective actions possible.

The specific action analyzed in this study was a parking tax of **\$1.50** applied to auto commuters (long term parkers) working in those portions of metropolitan areas well served by transit,

This tax would directly affect only about 20 percent of all employment in metropolitan areas and less than 5 percent of all auto trips, yet it would have a significant effect on transit ridership—about a 15 percent increase, considerably greater than the 5 percent increase in transit ridership estimated as the impact of a 50 percent increase in the price of gasoline.

A disadvantage of this action taken alone is that the increase in transit ridership would be concentrated in the peak period, necessitating a 20 to 30 percent increase in the size of the transit fleet and comparable increases in operating costs. When coupled with a no fare program, however, this effect is offset, particularly if it were an offpeak no fare program.

The parking tax is very efficient from an energy conservation standpoint because more than 80 percent of the new transit riders would otherwise have been auto drivers. Additional fuel savings would be realized by substantial increases in carpooling—auto occupancy for affected trips is estimated to increase from about 1.17 to 1.40,

If the application of such a parking tax was directly linked to the substantial improvement of transit in the same area, the tax would be more palatable. This is an important feature because of the resistance that parking tax plans have received in the past. A second, related feature is that the tax would not apply to short term parking in the areas taxed. Short term parking is used largely for shopping, personal business, and the like. Downtown merchants, who must compete with suburban merchants, seriously oppose taxes on short term parking,

A nationally applied parking tax of the type analyzed could generate up to about \$1 billion annually. However, the concept of a uniform \$1.50 tax would be inappropriate in actual practice—a lesser amount would be justified in smaller metropolitan areas.

The parking tax would be difficult if not impossible to be applied directly by Congress. In addition to questions of authority and feasibility, there would be problems in defining precisely where the taxes would apply. An alternative approach would be for Congress to provide the incentive for State or local governments to implement such taxes by making Federal funds available for major transit improvements—provided that the parking tax is levied to generate additional funds for the local match.

Major Increases in the Level of Transit Operations. ● Doubling of the fleet of rolling stock by 1980 is about the practical upper limit on delivery by manufacturers, allowing for needed replacements of old vehicles.

Achievement of this objective would fully provide the capacity that would be needed to accommodate the demand for transit service generated by potential severe oil shortages in the future—more than 2 1/2 times the level that would be required under a 6 million barrel per day reduction.

It would also provide about a 50 percent greater expansion of the transit fleet than would be required to accommodate the ridership that would be induced by a national program to no fare transit,

Doubling of transit service would increase peak period ridership by up to 25 percent and offpeak by up to 50 percent. The peak-to-base ridership ratio would thereby increase. If this were combined with the other major actions discussed, the utilization of

drivers and vehicles would be improved in the peak period with the increase in load factor being greater in the offpeak.

The total national cost of doubling transit operations (excluding inflation) would be about \$3 billion per year, \$2 billion of which was included in the cost estimate stated above for no fare transit. To clarify:

Operating cost of current national transit operations:	\$3 billion/yr.
Added cost of operations resulting from a no fare program due to increased ridership:	\$2 billion/yr.
Added cost if operations are further expanded to double current levels:	<u>\$1 billion/yr.</u>
TOTAL	\$6 billion/yr.



Washington, D.C. Bus Street

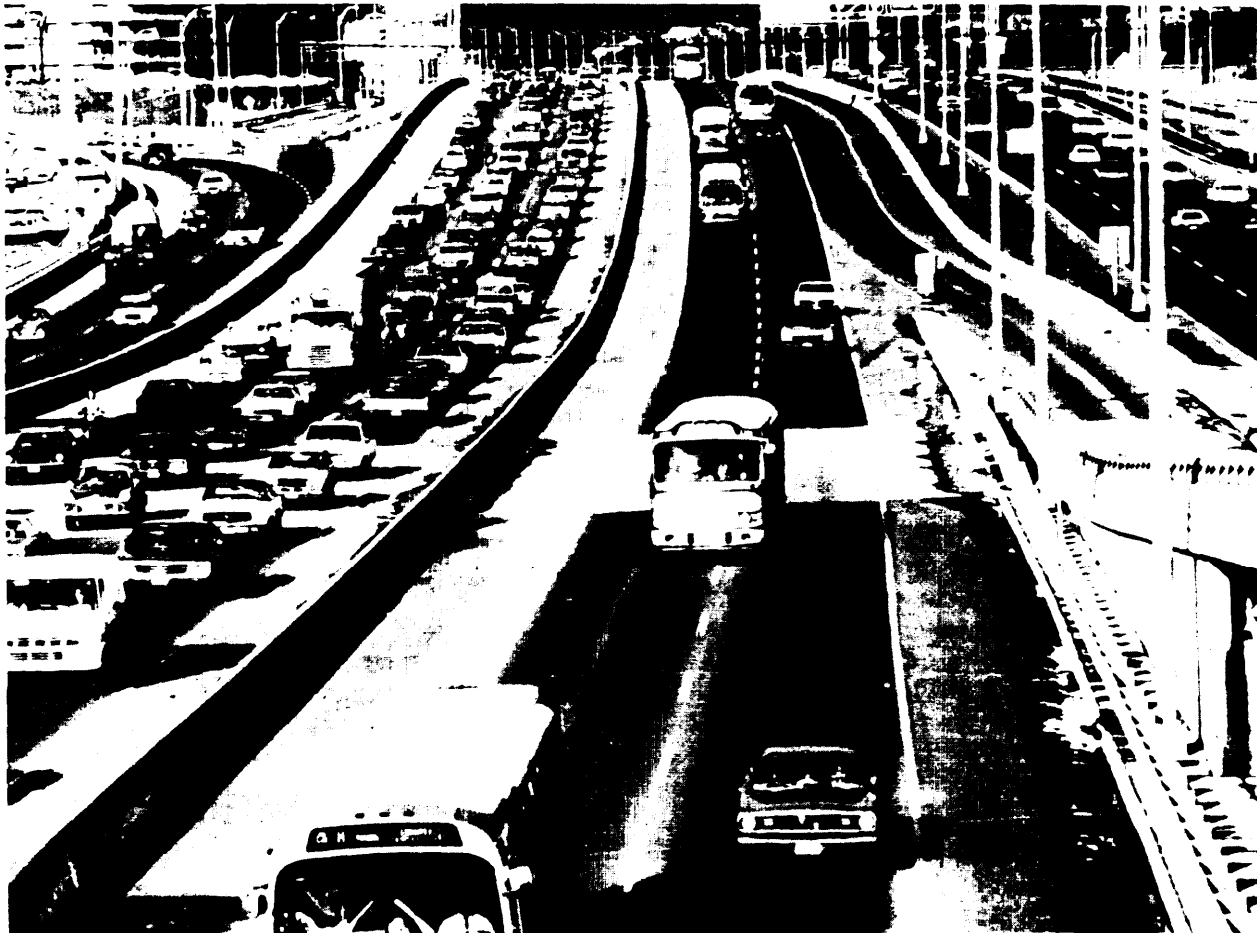
Initiatives Within the Highway Program To **Give** priority to Transit. A large number of individual actions can be cited as examples of significant measures that have been taken within the framework of the highway program to encourage public transportation. On the other hand, a great many more examples can be cited which have significant negative effects on transit, and energy consumption. The negative examples include all highway improvements in metropolitan areas which provide additional capacity or speed the flow of traffic for automobiles bound for destinations well served by transit. This includes a large percentage of highway improvements in metropolitan areas. In addition there are a great many more examples of missed opportunities to assist transit and conserve energy.

The basic problem is that the highway program has generally not been reoriented as a positive instrument of public policy to achieve today's widely accepted goals for urban transportation. The strong positive policy of encouraging the construction of

the Interstate Highway System and other types of general purpose highways, in urbanized areas and elsewhere, which developed in the 1950's, has generally been modified only to the extent of permitting States and localities to redirect this major thrust if they take contrary initiative.

Congress could achieve substantial short- and long-term objectives associated with the encouragement of transit and the conservation of energy if the urban highway program were positively reoriented to the achievement of these policies. This would mean that the emphasis would have to shift from the large scale construction of general purpose highways to construction of transit facilities and to operating measures to discourage auto use and encourage transit use, including the full array of actions which have proved effective:

- . bus priority lanes on existing streets;
- . construction of busways;



Transit and 4-Car Pool Riders Passing Frustrated Drivers, Washington Metropolitan Area

- signalization and traffic engineering measures to give priority to transit;
- bus ramps on existing freeways;
- fringe parking;
- peak period tolls and other pricing mechanisms; and
- construction of transit shelters, stations, etc.

Strong incentives and restrictions to ensure achievement of these objectives could be built into the urban highway program in much the same way as the freeway construction incentives and restrictions were developed for the highway program a generation ago.

LONGRUN CONSIDERATIONS

Background

In order to achieve longrun national energy and conservation objectives, Federal policy affecting land development must be more closely tied to the provision of public transportation services. The patterns of metropolitan growth that exist today are neither conducive to transit usage nor to the reduction of energy consumption. Given the developed status of metropolitan areas, actions which could be undertaken to effect the short term appear to be minimal. However, in the long term, actions could be initiated which would shape and guide development into more positive relationships with transit and energy.

The predominant pattern of recent growth is sprawl, a distribution of single-use centers of activity dispersed at low densities in the metropolitan landscape. This is a pattern which has been encouraged by diverse, uncoordinated public sector actions. The interstate highway program, and FHA and VA mortgage programs contributed to the out-migration from central cities. The growth which occurred in fringe areas has been largely scattered at low densities. In addition, zoning practices separated different uses from each other, which has resulted in single use activity areas. Rarely have residential developments, shopping centers, campus office developments or industrial parks been combined in close proximity.

Because different activities are separated from each other, causing more and longer auto trips to be

made, and because densities do not usually generate sufficient demand for transit service, the sprawl development pattern consumes a greater amount of energy for transportation purposes than any other pattern according to "The Cost of Sprawl," a report issued by the Council of Environmental Quality.

The greater vehicle miles traveled associated with sprawl results in a minimum of 19 percent more air pollution than other patterns. Annually, there is at least 11 percent more sediment from erosion and 7 percent greater pollutants from storm runoffs. Economically, sprawl is the most costly development pattern to construct and operate. It is most inefficient in terms of utilities, sewers, roads, and other infrastructure.

Alternative Development Patterns and Their Relationship to Transit and Energy

There are alternative development patterns which public policy could help foster which could overcome some of today's energy problems. For instance, "The Cost of Sprawl" examined the travel characteristics of different community prototypes comprised of various combinations of housing types. The findings indicate that with regard to gasoline consumption related only to transportation within prototypical communities of 10,000 dwelling units, the low density sprawl pattern consumed approximately 855 barrels per day as compared with 695 barrels per day for low density clustered developments, a saving of 19 percent or 160 barrels daily.

Based on Census Bureau projections, if 70 percent of the Nation's growth occurs on "the fringe of metropolitan areas (as occurred between 1960-70), then by the year 2000 the suburbs will experience an increase of approximately 10 million new dwelling units.

If these 10 million dwelling units were to be developed in low density clustered patterns rather than low density sprawl, the 25-year energy savings would amount to approximately 2,404,000 barrels of gasoline, assuming an equal number of units are built annually.

In effect, if growth could be accommodated in single family detached dwellings in clustered rather than sprawl patterns without any other initiatives, at the end of the 25-year period the daily savings in gasoline would be 160,000 barrels per day. This energy savings would be directly at-

tributable to reduced automobile travel. It is therefore, possible to maintain the single family home, and by shaping development patterns to realize a 19 percent annual reduction in energy consumption. In addition, because these patterns do not account for the leapfrog impact of scatteration on a regional scale, the 19 percent is conservative.

In addition to this type of action to influence the pattern of residential land use, other patterns of development could be fostered. Combining residential, employment, recreational, and cultural uses in close proximity, alternative development patterns could become multiuse centers which contained a range and diversity of activities and physical characteristics. These compact, multiuse activity centers would be distributed in a regional setting, and organized into a network closely related to transportation facilities.

Policy Implications

In order to achieve the long-term benefits cited above, major public policy initiatives are required which would respond to the interrelationship between development and transit.

In particular, Federal actions could seek to establish strong linkages between existing community development programs and transit programs in order to effect a coordinated national urban growth management policy. This policy could provide a framework to integrate a number of programs. For example, capital grants for sewage systems and water supply systems could be tied to the availability of transit services in communities, and to specific development patterns. The HUD New Towns program could establish requirements for transit as a prerequisite for loan eligibility. Mortgages and subsidies for community development in fringe areas could be oriented toward multiuse, clustered activity centers related to transit. The street networks and infrastructure in new communities could be an expansion of the Federal Aid Highway program funded by the trust fund. In effect, organized and systematic policies for public investment in infrastructure within existing programs could serve as an effective lever to guide and manage growth.

SUMMARY

This chapter discussed options within the framework of current UMTA programs to respond effec-

tively to future energy shortages or economic downturns, possible new initiatives beyond the scope of the present program, and energy, economic and environmental benefits achievable in the long run if new transportation initiatives are directly linked with land development controls and community development programs.

Possible options within current UMTA and related programs which were discussed included changes in funding levels and distribution **among** program categories, changes in statutory and administrative regulations, adoption of special incentives, and new emphases in planning activities. It was noted that an increase in the statutory allocation to the Formula Grant funds would be useful in achieving a number of national objectives. Also, a number of instances were identified where modification of existing statutory or administrative regulations could eliminate unnecessary delays in program implementation. How these options might be applied and their effectiveness in responding to economic downturns and energy shortages was also discussed.

Possible new initiatives were identified which go beyond the current commitment to transit in promoting transit ridership increases and in achieving other energy and economic objectives. It is noted that current policy will neither result in energy conservation nor promote dramatic ridership increases. The discussion assumes that it is preferable to take positive actions now rather than to merely be prepared to accommodate future economic and energy emergencies.

The range of initiatives assessed includes no fare and reduced fare transit, direct use of new gasoline taxes to support transit, use of parking taxes to encourage shifts of auto drivers to transit, a substantial increase in transit operations, and initiatives within the highway program to give priority to transit.

It is noted that strategies incorporating disincentives to auto use are far more effective than pure transit incentive strategies involving actions such as fare reductions and service improvements. However, it is further noted that transit ridership increases generated solely through auto disincentives would have an adverse effect on transit agency finances. As a result, special emphasis is placed on the need for a combined strategy as a means for promoting energy conservation without adversely affecting transit agency finances and without lowering the efficiency of the transit fleet.

The discussion of long-run considerations examined development patterns and their relationship to transit and energy. It is noted that existing patterns of metropolitan growth are not conducive to achieving major increases in the use of transit and energy conservation and **that substantial** long-term

benefits could be achieved through actions which encourage alternative development patterns. In this regard, a number of public policy initiatives which respond to the interrelationship between development and transit were discussed.