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File 1979-0032
Date 10/30/00

Project Name: Proposed Transportation Component of the City/County Plan

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		A few items are denoted with an asterisk (*), which means they are to be scanned for permanent record on the ISYS retrieval system. In some instances, not all entries designated to be scanned are present in the file. There are also documents specific to certain files, not found on the standard list. For this reason, a checklist has been included. **Remaining items, (not selected for scanning), will be marked present on the checklist. This index can serve as a quick guide for the contents of each file.** **Files denoted with (**) are to be located using the ISYS Query System. Planning Clearance will need to be typed in full, as well as other entries such as Ordinances, Resolutions, Board of Appeals, and etc.**
X	X	***Summary Sheet – Table of Contents**
		Application form
		Receipts for fees paid for anything
		***Submittal checklist**
		***General project report**
		Reduced copy of final plans or drawings
		Reduction of assessor's map
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		Record of certified mail
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		***City Council staff report and exhibits**
		***Summary sheet of final conditions**
		***Letters and correspondence dated after the date of final approval (pertaining to change in conditions or expiration date)**

DOCUMENTS SPECIFIC TO THIS DEVELOPMENT FILE:

X	X	Action Sheet			
X	X	Review Summary			
X	X	Proposed Transportation Component of the City/County Comprehensive Plan			
X		Comparison of Various Proposed Road Designations			
X	X	Memo from Ron Rish to Bob Kettle re: detailed review of the above including your proposed street designation system – 4/23/79			
X	X	Letter from Gary Robson to Planning Commissioners re: terminology in plan – 4/10/79			

Acres ~~_____~~

Units ~~_____~~

Density ~~_____~~

ACTION SHEET

File # 32-79

Zone ~~_____~~

Tax Area Code ~~_____~~

Activity PROPOSED TRANSPORTATION Component of the City/County Comp. Plan

Phase _____

Date Neighbors Notified _____

Date Submitted _____

Date CIC/MCC Legal Ad _____

Date Mailed Out _____

PC Hearing Date 24 April

Review Agencies

~~10 day~~ Review Period - Return By _____

Send		Send	
✓	COUNTY ROAD DEPARTMENT	___	FIRE _____
___	COUNTY HEALTH DEPARTMENT	___	IRRIGATION _____
___	COUNTY SURVEYOR	___	DRAINAGE _____
___	COMTRONICS	___	WATER (UTE, CLIFTON) _____
___	GRAND VALLEY RURAL POWER	___	SEWER _____
___	MOUNTAIN BELL	✓	CITY ENGINEER/UTILITIES _____
___	PUBLIC SERVICE	___	MACK, LOMA, MESA, COLLBRAN
___	SOIL CONSERVATION SERVICE	___	FRUITA, PALISADE
___	SCHOOL DISTRICT 51	✓	State Hwy
___	STATE HIGHWAY	~~✓~~	_____
___	STATE GEOLOGICAL	___	_____
___	STATE HEALTH - RADIOLOGICAL	___	_____
___	TRANSAMERICA TITLE	___	_____

Board	Date	Comments
___	_____	_____
___	_____	_____
___	_____	_____
___	_____	_____
___	_____	_____
___	_____	_____
___	_____	_____
___	_____	_____
___	_____	_____
___	_____	_____

Common Location _____

Staff Comments

Original Documents

___ Imp. Agreement $_____ Appraisal x .05 = $_____ Open Space;

___ Imp. Guarantee Receipt #_____ Check # _____

___ Covenants _____ Open Space Dedication

___ Power of Attorney

___ Dev. Schedule

REVIEW SHEET SUMMARY

FILE # 32-79 DATE SENT TO REVIEW AGENCIES 4/10/79

ITEM PROPOSED TRANSPORTATION COMPONENT OF THE CITY/COUNTY COMPREHENSIVE PLAN DATE DUE

PC MEETING DATE

BCC/CC MEETING DATE

DATE REC.	AGENCY	COMMENTS
4-16-79	CITY ENGINEER	1) See attached memo of March 29, 1979 for my review comments as submitted at the publi hearing before the City and County Planning Commissions. 2) I would agree that resolution of making street designations current is a very worthwhile objective. My concern is that the street designation issue should not be addressed out of context from the comprehensive plan process. It is affected and dependent on land use decisions (and visa-versa) and should not be determined arbitrarily. This issue will affect many citizens and should be decided with the best information which can be developed. In my opinion, too many factors are unknown (or undediced) at this time. 3) The priorities listed are one set of opinions. They do not correspond to the current 5 year Capital Improvements Program.
4-23-79	STATE HIGHWAY	Due to problems in East-West circulation-consideration should be given to upgrading Grand and Orchard Avenues, particularly in light of congestion on North Avenue.

VANDERWOOD
AND HENRY
ARCHITECTS
DESIGNERS PLANNERS

April 10, 1979

Planning Commissioners

I have reviewed the proposed Transportation Plan as prepared by the Development Department Staff and have the following comments.

First, the Staff should use the classification "Principal Arterial" in lieu of "Major Arterial". This term is the standard used by the U.S. Department of Transportation as published in their July 1974 Highway Functional Classification: Concepts, Criteria and Procedures. Also, the Transportation Task Force expanded this classification list to include a "Freeway" designation. This additional classification was needed to distinguish between I-70 type design standards and 12th Street type design standards. (Without the additional classification both I-70 and 12th Street would be designated as "Principal Arterials", yet I-70 functions much differently than 12th Street.) I recommend the inclusion of a "Freeway" designation.

The Roadways which should be classified as "Freeway" are:

1. I-70
2. Highway 6 & 50 from I-70 to the West to Highway 50 on Orchard Mesa to the East. (The T.T.F. recommended construction of a Southwest bypass to allow the bypass traffic from being forced to circulate through the Downtown area. I recommend this bypass.)
3. Highway 146 (32 Road) from I-70 to Highway 50.

Second, the following recommendations are for Roadways either classified as "Major Arterials" (Principal) by the staff or should be designated as "Principal Arterial".

1. Highway 6&50 West of the I-70 Interchange should be a Minor Arterial. As it is now designated, there is a duplication of function. (And a duplication of funds.)
2. North Avenue (Highway 6 & 50 to Highway 6 & 24) should be designated as a Minor Arterial. Because of the business function of North Avenue the higher speed Principal Arterial classification is not appropriate.

GARY L. VANDERWOOD
DONALD J. HENRY
P. O. Box 2046, Grand Junction, Colorado 81501 Ph. 242-0845

3. 27 Road (Highway 50 to Highway 6 & 24) has been totally ignored by the Staff. Most of the Transportation Studies that have been done recommend a Bridge Crossing at 27 Road. It was the opinion of the T.T.F. this construction would provide a much needed North-South Arterial, would relieve the 5th Street Bridge traffic, and would provide the most direct access to the Horizon Drive Area for the Orchard Mesa Residents.
4. State Home Road (D Road) should be designated as a Minor Arterial. Again a duplication of Roadway Function would exist because of the Highway 6 & 24 Principal Arterial designation.
5. The new Roadway connecting 29 Road (North of Patterson Road) to Horizon Drive should be a Principal Arterial. The Development Department Staff incorrectly designated this Road in the original preparation of the T.T.F. report.
6. Orchard Mesa's B½ Road needs only a Minor Arterial classification. A Principal Arterial designation would only serve to discourage the use of the Freeway system in that area.
7. Patterson Road between 1st Street and 7th Street must be a Principal Arterial if the rest of Patterson is to be designated as a Principal Arterial (which it should be). It is inexcusable for the Staff to include this in the proposed Transportation Plan! To keep traffic flowing evenly the Roadway system must be consistent and orderly.

Third, the following recommendations are for Roadways classified as "Minor Arterials" or "Collector".

1. South Broadway on the Redlands should be designated as a Minor Arterial in lieu of the Collector as proposed. Considering the area it serves and the potential development of that area a Collector designation is not adequate.
2. The Roadway classified as a Collector on East Orchard Mesa is serving too large an area to be a Collector. The T.T.F. recommended that a new Road be constructed as a Minor Arterial because of the alignment of the existing Road. It is recommended that a new Minor Arterial be constructed and the existing Road be upgraded to Collector standards. If a new Road is not constructed, the existing Road should be upgraded to Minor Arterial standards.
3. 7th Street is being proposed as a Minor Arterial, because of the residential areas on 7th Street between Grand Avenue and North Avenue. The section of 7th Street between Pitkin Avenue and North Avenue should be designated a Collector.
4. All the Roads North of 'G' Road designated as Minor Arterials (Except 24 Road) should only be Collectors. I realize some of these are the recommendations made by the Northwest Task Force, however, good design standards indicate that a Minor Arterial should not terminate at a Collector for it creates "Bottlenecks". These Roads should be Collectors tying into the 'G'Road Minor Arterial system. (This situation also exists in the Ridges Subdivision and should be eliminated by use of only Collectors.)

5. Grand Avenue should be a Minor Arterial between 1st Street and 12th Street. East of 12th Street should be a Collector.
6. 'C' Road between 29 Road and 32 Road should be designated a Collector. This will require some new construction immediately East of 29 Road.

Finally, I have one recommended change to the priority list. That change is to construct the 27 Road corridor prior to the 29 Road corridor. The 27 Road construction will be expensive but will also be a major step in creating 12th Street as the primary North-South Arterial. The construction will, as stated before, relieve the 5th Street Bridge traffic load which in turn will ease the traffic congestion in the Downtown area. The expense of doing this construction will only increase with time.

Thank you for this opportunity to respond and if I can be of further assistance, feel free to ask.

Sincerely

Gregory S. Robson

GSR/cac

CITY OF GRAND JUNCTION, COLORADO

MEMORANDUM

Reply Requested
Yes ☐ No ☐

Date
Apr. 23, 1979

To: (From:) Bob Kettle

From: (To:) Ron Rish RPR

SUBJECT: Proposed Transportation Component of Comprehensive Plan

The City Manager has requested that I perform a more detailed review of the above including your proposed street designation system. In order to do that I need the following information from you.

1. The design year(s) proposed for the component plan.
2. The estimated Urban Area population for that year(s).
3. Street map(s) of the Urban Area showing:

    A. The estimated limits of the Urban Area for the selected design year(s).
    B. All probable zoning for the selected design year(s).
    C. The best estimate of area delineation of the following for the selected design year(s).

        (1) CBD(s)
        (2) Major shopping areas
        (3) Major employment areas
        (4) Schools, parks, recreation and cultural centers.
        (5) High density housing areas
        (6) Locations of probable development where streets do not currently exist.
        (7) Primary direction(s) of development expansions from existing developed areas.

    D. Any proposed transit routes
    E. Any proposed bike routes
    F. CDH proposed improvements to state highway system by the selected design year(s).
    G. Your best estimate of proposed time scheduling for those capital improvements which you have included on your priority lists.

Enclosed are some exerpts from a publication which I feel might be of some help to you in working through this process.

Upon receipt of the above information I will try to give you a time estimate of when I think I can complete my review. Bob, this process may appear sluggish, but if we don't iterate and communicate the results will reflect that lack.

Enclosure

cc: Metzner
Patterson
Wysocki

NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM
REPORT 167

TRANSPORTATION PLANNING FOR SMALL URBAN AREAS

W. L. GRECCO, F. J. WEGMANN,
J. A. SPENCER AND A. CHATTERJEE
UNIVERSITY OF TENNESSEE
KNOXVILLE, TENNESSEE

RESEARCH SPONSORED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS IN COOPERATION WITH THE FEDERAL HIGHWAY ADMINISTRATION

AREAS OF INTEREST:
URBAN TRANSPORTATION ADMINISTRATION
URBAN COMMUNITY VALUES
URBAN LAND USE
URBAN TRANSPORTATION SYSTEMS

TRANSPORTATION RESEARCH BOARD
NATIONAL RESEARCH COUNCIL
WASHINGTON, D.C. 1976

CONTENTS

CHAPTER THREE

FINDINGS: LAND-USE/TRANSPORTATION PLANNING

INTRODUCTION

The transportation planning process requires forecasts of various socioeconomic and land-use data as input for travel forecasts. Transportation procedures use socioeconomic data that are ultimately dependent on land use because land-use patterns reflect the distribution of population, income levels, employment, and other socioeconomic features. Thus, land-use plans predetermine many of the factors that ultimately affect the content of transportation plans. The mutual dependence of land-use and transportation planning requires the planning strategy harmoniously to accommodate both activities. This chapter presents findings showing that customization is a desirable planning strategy that can simplify land-use and transportation planning activities and focus them more directly toward meeting community needs.

The assessment of current land-use practice, which is discussed, shows that some customization already occurs in land-use planning. The concluding section shows how customization can be carried further and more explicitly applied to the integration of land use and transportation.

REVIEW OF CURRENT PRACTICE IN LAND-USE PLANNING

Planning is now widely accepted as a function of government. Cities, counties, townships, and other units of local government routinely prepare plans for the future development and redevelopment of their jurisdictions. Such plans, typically called comprehensive or general plans, are prepared under the auspices of local or regional planning commissions. Land use has been, and is, a central element in such plans.

One of the most important influences of the past 20 years has been the "701" program (*15*). Section 701 of the Housing Act of 1954 provided matching Federal funds to support city and regional planning efforts. The 701 guidelines tended to standardize community plans. The guidelines did not specify the procedures to be used in preparing plans, but they did specify the scope and content of plans. These guidelines were issued in a variety of forms over a period of years (*16*).

The inquiry into current practice included an inventory and analysis of 155 plan documents drawn from communities of 5,000 to 250,000 people. The communities are located in 30 states with Tennessee, Alabama, Florida, and Kentucky most heavily represented. The plans were prepared by state, regional, and city agencies, by consultants, and by combinations of the above. Over three-fourths of the plans were prepared after 1967. The analysis of the plans was supplemented with in-depth interviews of 15 agency representatives in Kentucky, Tennessee, Ohio, Georgia, Texas, and Pennsylvania. They included representatives of state, regional, and city agencies, and consultants. A special effort was made to interview professionals who would have broad knowledge of practices in their states.

The analysis of plan documents shows that land-use planning in smaller communities tends to be highly standardized in format and content but not in procedures. Where official encouragement existed, plans are openly responsive to land needs.

Plans reflect some investment in goal formulation but the statements have tended to be so general that their utility has been marginal. Goal formulation usually reflects little citizen input other than that through service on planning commissions or other traditional committees. The majority of the plans are long range (20 years or more) and are reasonably consistent in data input and format. Few plans report on procedural methods used but all indications are that most are heavily dependent on manual methods rather than computer methods. The level of sophistication, reflected in such phases as the elaboration of various alternatives, increases with the larger population. Plan analysis findings are presented in greater detail in Appendix B.

Coordination of data collection and maintenance is important to transportation and land-use planning. While the benefits to small communities are not so obvious, they are nevertheless real, especially when they can be sustained and refined as between a SDOT and a state land-use planning agency. The interviews provided an opportunity to confirm the observations on current practice and gain additional insight into procedures and agency attitudes.

Positive Aspects of Current Practice

The presence of large numbers of community plans represents a substantial information resource for the preparation of other community plans now and in the future. Although the individual plan documents do not make it apparent, isolated spot checks and the interviews strongly suggest that many of the communities now have documents that represent a second or third comprehensive community plan. In such cases there is not only a current inventory of population, housing, land use, and economic activity, but also a substantial historical record of those key factors. For this reason, the circumstances under which comprehensive land-use and transportation plans are now prepared are substantially different from what they were 15 years or so ago when the current methodologies and practices for preparation of comprehensive community plans were being evolved. We are no longer starting from "scratch."

It is apparent from the review of plan documents and from the interviews that planning is now widely accepted at the local levels of government, even in the smallest population ranges, as a customary practice of local government. The community that has never engaged in systematic plan-

ning for development is now clearly the exception rather than the rule. The significant differences in communities are the attitudinal differences that communities bring to the planning process. The substantial increase in planning activities that has occurred over the past 20 years appears to have been spurred significantly by the funding programs of the federal government and the necessity to engage in comprehensive planning in order to acquire various federal funds for local application. The federal funds available for a simulation of planning have had their effect.

Many communities that have engaged in planning have come to appreciate its value as an end in itself and now continue to engage in continuous planning activities because there is a recognition by local public officials that planning enhances the decision-making capability of the community and improves the over-all quality of development. In other cases, however, it is apparent that communities are not fully convinced of the benefits of planning and continue to see it largely as a prerequisite to other objectives. In these instances the planning effort is characterized by a series of spasmodic efforts to produce documents that are technically adequate to satisfy federal agencies but that have little impact on the decision-making of local government.

Because the communities exhibiting these various attitudes are often serviced by the same state-assistance programs or consulting firms, the review of plan documents often provides a very poor clue to the attitudes that individual communities have brought to the planning process. But planners on the scene have usually been quick to detect these attitudes and have often expanded or contracted the advisory activities and educational activities associated with the development of a comprehensive plan in response to the receptiveness of local citizens and public officials. The staff adjustments do not show in the documents themselves.

An increasing number of communities of 25,000 to 50,000 people are establishing resident planning staffs. These staffs are usually competent and useful for the day-to-day operations of zoning administration, subdivision review, and the collection and distribution of data. The staffs of the one- and two-person offices serving such communities, however, often lack sufficient technical training, time, or experience to conduct the more sophisticated studies.

The widespread appointment of planning commissions and the provision for some level of technical assistance by means of consultants, resident staffs, or state agencies has also provided a more widespread distribution of the machinery necessary to help implement local community plans. The presence of local planning commissions frequently suggests that there is at least a minimal capability to enforce a zoning ordinance and subdivision regulations. The quality of that enforcement process is substantially affected by the quality and contact hours of technical assistance.

In conclusion, it should be noted that the spread of planning activities has been accompanied by increases in professional staffs and has encouraged some broadening of planning processes and techniques as depicted in the literature. Nevertheless, the planning techniques inventoried in this research provide a broader range of resources than are being used to improve the quality of technical assistance and planning at the local level. Transportation planners will find that they often have a wealth of assembled data that is useful in transportation planning. This research strongly suggests that research and educational efforts may have higher payoff in the near future by concentrating on the improvement of the application of known techniques by technicians at the local level than by trying to improve techniques in ways which require increasingly sophisticated personnel or equipment.

Negative Aspects of Current Practice

One of the obvious areas of difficulty is the problem of coordinating and sharing data between various planning agencies working in the same community. A prime example is the obvious benefit of having land-use and transportation planning agencies share the collection and analysis of data on such current base items as population, land use, and economic activity. There is little overt unwillingness to attempt to coordinate the collection of data and share it between agencies, but there are problems.

Individuals and agencies tend to develop their own operating procedures and study objectives. Once comfortable with a particular data format they are often reluctant to change it to accommodate other agencies. Thus, a land-use inventory may be difficult to coordinate between land-use and transportation planning agencies because the two agencies prefer to have the data collected at different levels of detail. One may prefer a highly generalized classification system with data summarized on a block basis. Another may prefer a rigorous system utilizing a three- or four-digit code with information available for keypunch on a parcel-by-parcel basis.

Another difficulty is that agencies may wish to summarize their data to different subunits. It is not uncommon to find land-use and transportation planning agencies working in the same community but using neighborhoods, planning units, or traffic zones having roughly the same over-all dimensions but different boundaries. In this situation, data must be resummarized in order to be shared from one agency to another at the subunit level. Such difficulties can provide a convenient excuse for personnel within various agencies who prefer to handle their data independently rather than go through the adjustments that are necessary for coordination with another agency.

Some of the differences in the use of data and geographic subunits are historical, but others reflect very different anticipated needs by the agencies. In one state a substantial effort has been made to standardize data collection techniques and classification systems between the SDOT and the state planning office responsible for providing land-use planning technical assistance to small communities. Although progress has been made, very real difficulties exist in this situation. For example, changing the format of data collection in a particular community may gain benefits in coordination with other agencies, but the changed format may no longer be compatible with those of studies done in that same community in previous years and may thus lose the ability to historically compare data for purposes of analysis and forecasts.

Many of the difficulties encountered in preparation of

plans for small communities are associated with the difficulties of providing technical assistance on a continuing basis. In those instances where technical personnel are removed from day-to-day contact with the local decision-makers, local planning commissions, and citizens, difficulty exists in providing the kind of educational process and intimate insight into the local issues that enhance the preparation of plan documents and their implementation. In small communities, however, there still is a tendency to emphasize the preparation of planning documents rather than the development of solutions to visible local problems and ongoing advice to local and regional decision-makers. When the technical personnel responsible for preparation of the plan are present in the community for only short intermittent periods, it is very difficult to maintain a sensitivity to the way in which local problems evolve and to maintain the ready access to decision-makers that is necessary to effective plan implementation. So long as those agencies responsible for planning assistance are able to document their activity by the production of planning documents per se, there is no way to assure that the planning documents are a means to effective decision-making rather than an end in themselves. The most apparent assurance seen in the interviews is the increased sense of professional responsibility in some agencies.

One of the most persistent deficiencies encountered in planning documents and mentioned in the interviews was the inadequate documentation and recording procedures of agencies responsible for technical planning efforts. The absence of documentation occurs in two general areas. First, there is an absence of documentation in the methods used in preparation of plans. The documents examined show a clear tendency to provide elaborate documentation of actual data and reasonably good documentation and description of plan proposals. What is often missing is the provision of documents illustrating or describing the assumptions and methods used in collecting data, making forecasts, developing plans, and making recommendations. The other area in which documentation tends to be absent is in descriptions of local situations that influence the development of various strategies on the part of the technical staff.

The difficulties of documentation are probably caused by the practice of having single planning documents serve several purposes. The same plan report often serves (a) as the vehicle for presentation of recommendations to local officials and (b) as the repository of information, data, and techniques used in the preparation of the recommendations. It would appear that substantial improvement could be made in plan documentation if funding agencies encouraged more flexibility by allowing planning agencies to prepare shorter and more popularized presentations of their recommendations for local consumption and limited numbers of mimeographed technical documents for technical review and record.

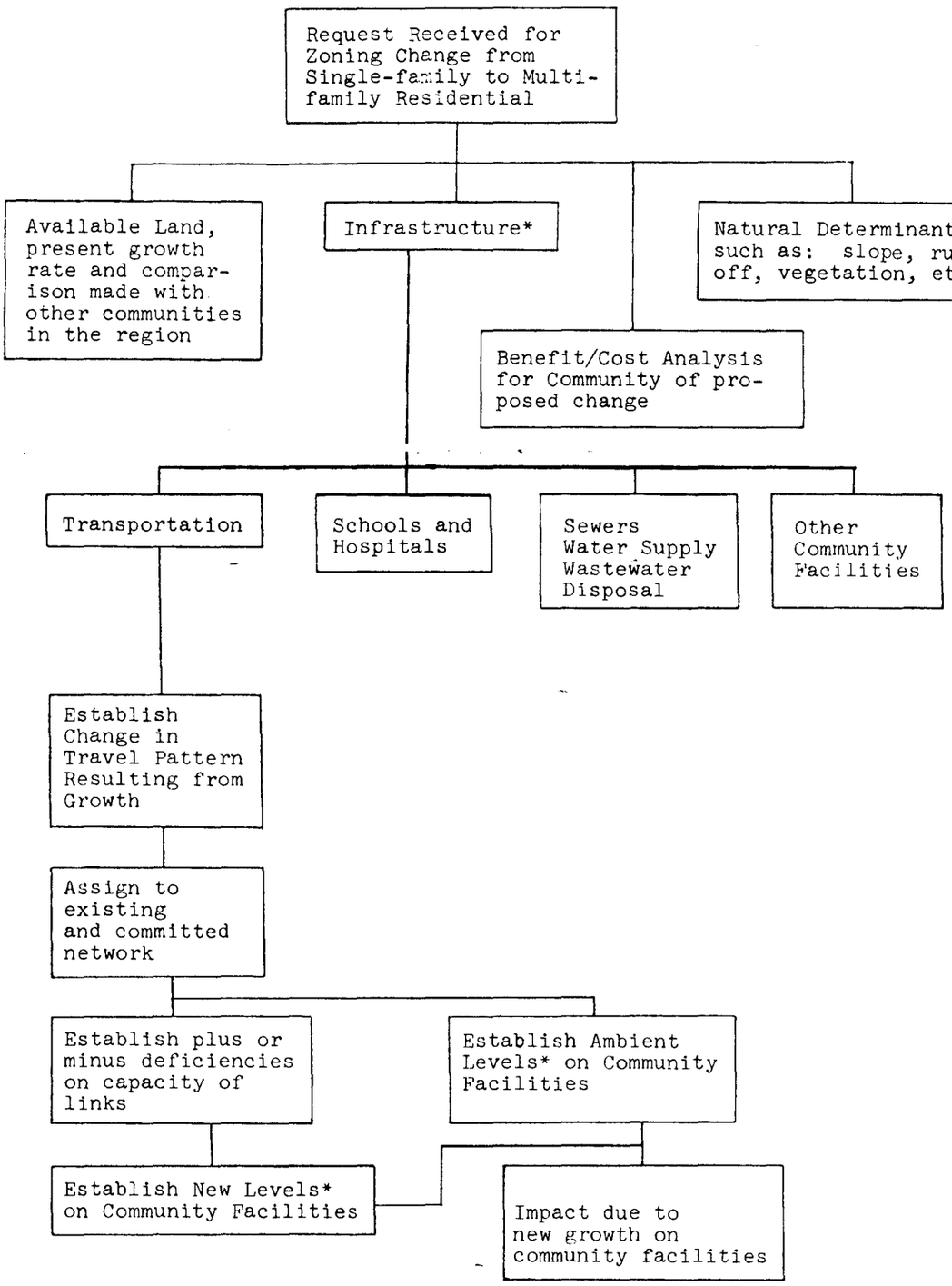
One of the problems associated with poor plan documentation is that the process of upgrading plans is made substantially more difficult for a technical staff. There is a strong tendency observed in the plan documents examined, and exposed in the interviews, for plan preparation efforts to start over from "scratch" rather than to update information collected within recent years by the same agency in the same community. This not only represents an unnecessary expenditure of funds for the collection of information but also tends to preclude the accumulation of some rationale and history of the decision-making process in the communities. Thus, each technical staff person who has not worked in a community previously is required to discover personally on a trial-and-error basis a great deal about local value systems, personalities, and physical or economic pecularities of the community that influenced previous plan proposals. It is little wonder that highly capable technicians find that they do not have as much credibility with local people as they might reasonably expect to have.

FUTURE PRACTICE: LAND USE/TRANSPORTATION

This section puts forth the thesis that changes in the process of determining land-use controls could eliminate many of the shortcomings under which the UTP process must function. Improvement could come through advance considerations of land-use development and its impact on the community's transportation needs. Traditionally land-use decisions have been made from data collected on the need for the new land use. The argument put forth is that because there is a market-place demand, the proposed land-use change will be of service to the public. When the change has taken place, it almost always is a land use at higher intensity and a use that will generate more traffic. For this reason, very few zoning changes or subdivision permits will assist the transportation planner in his quest for producing higher levels of service on the congested arteries. Land-use changes are then followed by demands by users for improvements to the transportation system. In recent years proposed transportation improvements have been stopped or at least stalled because of environmental impacts. The increase in traffic facilities due to the land development can now be equated to its demand for land, its destruction of schools or homes, its contribution to air pollution, and so forth. In one sense, the insurmountable problems created by land development are thrust upon the transportation planner. But, if what is proposed in terms of new land-use growth controls comes about, transportation system evaluations will be performed in advance or at least at the time of the planned development.

The customized procedures proposed are oriented to the existing state of land-use controls, but the future will bring alternatives to land-use growth controls that will significantly affect the land use/transportation interaction. The most significant fundamental change will be to require proper consideration of transportation needs (as well as other elements of the infrastructure) prior to the actual land development. The steps in one possible urban growth control process are shown in Figure 4.

To varying degrees, land-use control can be achieved through proper use of the comprehensive plan or performance standards. New concepts, which are surely to be tested and eventually evaluated by the courts, include impact zoning and demand-based and supply-based methodologies. Further, within the next decade there will be a



* Levels for transportation are:
- a. accidents
- b. congestion
- c. noise at schools, hospitals, residences, etc.
- d. air pollution measured in carbon monoxide, hydrocarbons, particulate matter, sulphur dioxides and oxides of nitrogen at the locations of (c) above
- e. aesthetic effects

Figure 4. Steps in the urban growth control process.

shift in control of land uses to the federal and state governments. This will not completely void local governmental power or responsibilities, but those land development issues which have multistate and/or regional implications will be addressed by the appropriate governmental level.

In anticipation of improved land-use controls, transportation planners must concentrate on:

1. Establishing simplified relationships between land-use types and traffic generated for both peak and nonpeak periods. Average trip rates do exist, but with large variances. Little has been researched relative to trip rates by time period.
2. Assisting in the establishment of relationships between land-use type and demands on other elements of the infrastructure.
3. Establishing relationships that could assist in predicting what levels of service are tolerable for each element of the infrastructure and particularly acceptable levels of service for travel by peak and nonpeak periods.
4. Assisting in the establishment of measures of economy of scale for each element of the infrastructure and to identify what variables influence these values.
5. Assisting in the establishment of how sensitive is the functional performance of each element of the infrastructure to variations in demands near the capacity value.
6. Assisting in the establishment of community goals and objectives, which can provide insights into proper land-use development.
7. Assisting in the establishment of a community data bank to serve the data needs for land-use control decision-making and other planning activities in the community or region.

CUSTOMIZATION: A ROUTE TO SIMPLIFIED PLANNING

An important strategy towards simplification of transportation planning in small urban areas is to recognize the inherent variability of transportation problems in different urban areas and devise traffic forecasting and planning procedures commensurate with the nature of the problem. Although customization is being implemented in some situations, all too frequently planning procedures remain as standardized or scaled-down, lower-budget modifications of large-area studies. From the field interviews, it was found that variations in the characteristics influencing the over-all nature of the transportation problem include:

1. The nature and extent of the transportation problem.
2. Sensitivity of the forecasting procedure to the underlying transportation-related issues.
3. Ability to provide results meaningful to the decision-maker.
4. Compatibility with the degree of sophistication and time requirement appropriate for a smaller urban area.
5. Availability of data and other informational and computational facilities.
6. Availability of manpower and technical expertise.

Land-use planning is partially responsive to such variability, and customization is already occurring to a considerable extent in the procedures used to forecast land use in small communities. Many planners are foregoing elaborate computer procedures in favor of various manual arrangements that are heavily dependent on the planner's knowledge of the community and the exercise of professional judgment in an ad hoc or single-minded fashion. In communities under 50,000, for example, the planner often makes gross estimates of various land-use needs at some future date on the basis of population and economic studies. The planner then spatially distributes the required land-use activities, more by design principles than projections, while taking into account the capability of vacant land, proposed public improvements, and his knowledge of local development trends, land availability, and similar factors. In communities over 50,000, somewhat more structured short-cut procedures may be used, such as the one developed in Cumberland County, New Jersey (*17*).

The major needs for customization in land-use planning are in defining the scope of work and in organization. Circumstances do not require that all land-use plans be cast in the format of 20-year area-wide schemes. There is a need for some short-range planning and small-area planning. There is a need for land-use planners to focus more specifically on the transportation impact of major land-use decisions. All these efforts are now conducted to some extent, but the allegiance to long-range comprehensive plans appears to be diluting the extent and effectiveness of these more issue-oriented efforts.

Customization needs to be oriented to organization and land-use and traffic forecasting procedures that can utilize simplified techniques. The scope of planning in small urban areas is not the same as that in large metropolitan areas, and the role of the standardized, unified systems-oriented transportation plan also is somewhat different. Long-range transportation plans establish a framework for providing transportation facilities to satisfy future growth of the community as contemplated by the long-range land-use plan. Yet in small areas, development is often not in conformance with the long-range plan. Thus the validity of long-range planning is more questionable in small areas than anywhere else (*2*). The 20-year plan serves as a guide for making short-range decisions and identifying relative priorities, but dangers are inherent in pursuing short-range objectives at the exclusion of long-range developments. A piecemeal approach can lead to irretrievable commitment of resources, which can handicap the expansion of transportation facilities later. Without the guidance of a long-range plan, decisions become day-to-day; this effect overlooks future requirements and results in inefficient allocations of resources. Transportation decisions should be made within the context of a planning framework scaled down to intermediate years. It is likely that this plan would not require the detailed level of traffic forecasting capability conventionally provided by trip-generation, trip-distribution, and traffic assignment models. Little can be accomplished by postponing immediate or short-range transportation needs while awaiting the completion of a long-range plan relying on detailed traffic estimates.

Small area transportation plans have not pursued short-range planning to any practical extent. The role of public transit and the effective utilization of traffic operational

improvements such as channelization, street extension, restricted curb parking, intersection redesign, and signalization or the assessment of the impact of an imminent land-use change on the localized area transportation system are typical small-area issues demanding immediate attention but not adequately treated in long-range planning. Short-range planning is characteristically concerned with stopgap measures which are highly visible and use relatively low-cost improvements (*13*).

The recent energy crisis has emphasized the need for contingency planning and the ability to consider service-oriented plans in order to obtain maximum benefit from existing facilities. With only limited transportation expertise available to the smaller urban areas, the development of a transportation plan provides a unique opportunity to investigate transportation issues and should not be restricted to systems-oriented facility plans at the exclusion of short-range planning.

Reflecting on the structure of a small urban area consisting of a limited street system, a few well-defined residential areas, and special generators, it is conceivable that the major long-range capacity deficiencies, if any, can be identified without utilizing network traffic forecasting models. A simple comparison of traffic patterns with traffic volumes might explain major street deficiencies attributed either to severe congestion along the most direct route or the absence of a direct route. Also in the case of smaller study areas, traffic external to the community can assume a dominant role in establishing the level of service on the major street system.

In the event a street planning policy is adopted that first satisfies capacity deficiencies by improving major thoroughfares by means of widening and subsequently seeks a new alignment (only after the other measures have been exhausted), such as a bypass or loop road, then traffic forecasts might be developed on the basis of corridors. Future traffic forecasts suitable for preparing a thoroughfare plan in a small urban area may be derived without resorting to

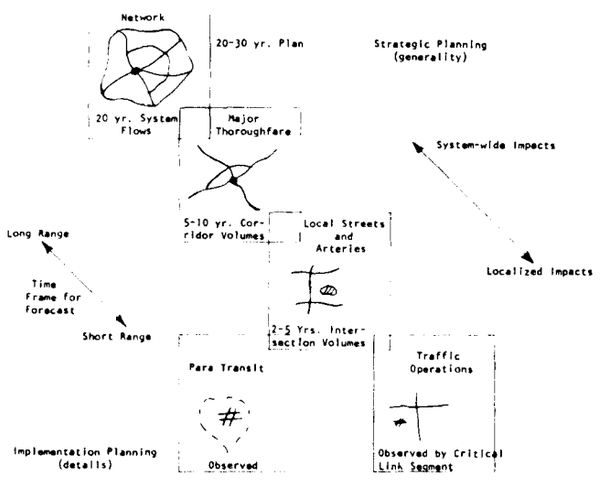


Figure 5. Transportation forecasts for a range of planning environments.

sophisticated and time-consuming network models (*18*). Because external trips as a percent of total trips generally increase as the population size decreases and the number of corridors in a smaller area is generally less than that in a larger area, the net result is that the small-area traffic corridors are more intensely utilized and play a more dominant role in determining travel patterns (*19*). Where growth rates are expected to be irregular or difficult to anticipate, a system-oriented transportation plan might well be postulated on basic principles and general community characteristics such as population, land-use, and land development data without formally preparing future traffic estimates. Prior to any commitments of resources for facility construction, however, the design requirements can be defined more precisely and the need formally justified (*18*).

It is the finding of this research that transportation planning in small urban areas must be tailored to the nature of the problem, the characteristics of the community, and the resources available in order to conduct a transportation study. An important element of the plan is to explore a range of topic areas, as shown in Figure 5, extending from "strategic" long-range facility-oriented plans to implementation planning stressing shorter-range service-oriented improvements. The basic strategy devised by this research is to first identify the magnitude of the planning problem and resources available and then define the appropriate level of planning. The following subject areas related to planning techniques and different levels of planning have been investigated:

1. Development and testing of simplified models using the conventional structure of trip generation, trip distribution, and traffic assignment directed to the development of a long-range systems plan and also alternative strategies for updating travel patterns.
2. Development and testing of corridor models appropriate for small urban area thoroughfare planning where the number of alternatives is limited.
3. Development of a short-range consumer-oriented transit system planning procedure.
4. Development of a localized traffic impact analysis technique for assessing the impact of new land developments on the traffic-carrying capacity of the local street system.

These simplified travel forecasting techniques, discussed at length in Chapter Four, have been selected to reflect the various scales of transportation needs and resource capabilities typically encountered in smaller urban areas. These simplified procedures also recognize the difference in time horizons (i.e., long-range versus short-range) and the variation in impact areas such as broad geographical coverage with network implications, isolated travel corridors and localized impact areas like major streets, or intersections abutting a proposed activity center. This approach is particularly significant because emphasis is shifting away from long-range plans to shorter-range improvements and the need to update and refine the initial plans periodically is recognized. Rather than relying on a complex and computer-oriented travel-simulation package for application in all planning environments, more attention must be

given to stratifying the transportation problem and using, where appropriate, such simplified procedures as categorical trip analyses, trip rates, and growth factors, and in general drawing on the wealth of travel data already collected for other small urban areas. The concept that planning tools should be commensurate with the problem also requires that consideration be given to organizational changes as previously discussed.

Although not intended to represent an exhaustive array of potential procedures, the following analysis techniques, also summarized in Table 2, were investigated to illustrate simplified procedures that could be used in a customized process:

1. Network simulation.
2. Corridor analysis.
3. Small-area transit planning.
4. Localized traffic impacts.

TABLE 2

SUMMARY OF TRAFFIC FORECASTING PROCEDURES

ANALYSIS LEVEL	TIME FRAME	LEVEL OF ANALYSIS	DECISION FRAMEWORK
Network analysis	5 to 20 years	Areawide transportation system	Physical roadway deficiencies with network implications—thoroughfare planning
Traffic corridor analysis	5 to 10 years	Travel corridor	Physical roadway deficiencies within a corridor with view of construction of a bypass or improving corridor capacities
Transit planning	Existing traffic	1. Neighborhood 2. Activity centers (identification of common trip end clusters and time clusters)	Define the role of mass transit and paratransit
Localized traffic impacts	Existing traffic generated in response to proposed land-use development	Street intersections and access points	Localized roadway deficiencies requiring traffic operational improvements

CHAPTER FOUR

INTERPRETATION, APPRAISAL, AND APPLICATION

SIMPLIFIED NETWORK PROCEDURES

To fully test the customization recommended for organization and procedures, a large number of cities of varying characteristics and problems would be required. Testing would be further complicated if one identified a large number of simplifying techniques for possible application. As an alternative, the researchers selected a limited number of simplified techniques to illustrate the procedures rather than to endorse simplification itself. Readers interested in the application of simplified techniques at the network level and at the corridor or local level will find the appendices valuable.

Network travel simulation procedures based on the modeling of generation, distribution, modal split, and assignment have had the greatest use in large urban areas. Simplification has been attempted in each of the modeling phases in an effort to reduce the costs in time and money. The use of synthetic models has been proposed in an effort to reduce these costs.

Borrowing the travel models from a community or cross-section of communities of similar characteristics in terms

trends in turning movements. The results are shown in Figure 17. With these traffic estimates available, the final step involves comparison of the projected traffic volumes with roadway capacities, leading to the identification of potential difficulties that will need to be addressed in the immediate future. It should be noted that, through the use of attenuation factors representing vehicle trip lengths, the trips can be assigned to links beyond the immediate area of concern. Trip distribution estimates based on the spatial distribution of activities in the community can aid in estimating turning movements at key intersections. Traffic estimates such as those provided by the foregoing example can become an integral part of a city street priority-needs analysis (*68*).

CHAPTER FIVE

CONCLUSIONS AND SUGGESTIONS FOR FUTURE RESEARCH

CONCLUSIONS

The initial task of this research was to establish the nature of the UTP process required for small urban areas. As a result, extensive investigation needs were established at three levels—organizational, procedural, and technical. The nature of findings ranges from general or policy-type at the organizational level to more specific at the technical level. From the research the following conclusions can be stated:

1. Past attempts at urban transportation planning have been largely process-oriented instead of issue-dependent.
2. Previous organizational and procedural approaches have failed to recognize explicitly that planning must be performed in a variety of environments under various institutional, personnel, and other resource constraints. Technical procedures must be selected on the basis of resources available and issues to be resolved. A recommendation was made to alter the present organizational framework to overcome these shortcomings.
3. Customization of the procedures for land-use planning would tend to foster a transportation planning process that is more responsive to local needs by identifying those issues most important to the community. Wide-spread concern for the environment causes a change in the sequencing of considerations for future land-use developments. Impacts of new land-use proposals on transportation facilities need to be evaluated prior to an approval for a change in zoning. Such approval places transportation planning into a lead position rather than one of having to catch up with demands.
4. Traffic forecasting procedures should be customized for varying levels of analysis and differing time frames to best respond to the decisions required. Past studies in large urban areas concentrated on developing area-wide transportation systems for 20 years and, hence, utilized complex computer-oriented network analysis and travel simulation techniques.
5. It is possible to reduce the time and cost requirements of network simulation procedures through the use of synthetic travel models. However, there is a need to complement this approach with a selectively chosen small-sample home-interview survey as well as an external cordon roadside survey. Savings in planning also can accrue as a result of better coordination of data needs for transportation and land-use planning.
6. Disaggregate behaviorial models have added considerable flexibility and reduced the magnitude of data requirements. They can be extremely valuable in the updating phase of the continuing planning proecss.
7. Short-range transit planning for small urban areas can be more effective by using a consumer-oriented approach that differentiates between transit demand characteristics in the study area. Demand analysis is performed in terms of potential market segments and, subsequently, a broad range of transit alternatives is evaluated from the standpoint of meeting the needs and preference of each market. Demand concentrations by time of day and/or spatial distribution of trip ends should be evaluated for feasibility analyses, but at the same time the need for experimentation and demonstration must be fully recognized.
8. Many small-area transportation problems are primarily congestion on certain major arterial streets. This level of analysis is best handled with the corridor approach. For those small urban areas which meet the criteria, a corridor growth factor based on dwelling units and employment densities can yield acceptable traffic estimates for present and future conditions.
9. In many instances the siting of a new specific traffic generator in a small urban area has monumental traffic impact. Simplified techniques using locally derived or borrowed trip rates for various land uses can provide data required for assessing localized traffic impacts.
10. Each effort of an agency to respond to requests for planning services should be approached with a fresh and open attitude toward coordination and an explicit effort to explore the possibilities and needs for coordination before the assignment of responsibilities and technical tasks is firmed-up to the point of inflexibility.

SUGGESTIONS FOR FUTURE RESEARCH

One of the findings of this research is that the existing transportation planning process does not always meet the

PROPOSED TRANSPORTATION COMPONENT OF THE CITY/COUNTY COMPREHENSIVE PLAN

1. Introduction. Ideally, the Planning staff would of course prefer to address transportation simultaneously with the entire Comprehensive Plans for the City and County, which have been projected for completion in 1980. Unfortunately, several transportation deficiencies need immediate solutions now, which only increase in cost each year. In order to successfully compete for construction funds, we need to arrive at community-wide consensus on our construction priorities. Unsurprisingly, several different transportation-related bodies each have their own set of priorities at present.

In addition, several "roadway designations" on the Small-Cooley Plan are seriously out of date, and need revision. Furthermore, both the City and County Planning Commissions and the Transportation Task Force have completed their recommendations to the elected officials. Unless action is taken soon, this momentum may be lost. And finally, the State Highway Commission has recently proposed a framework for transporation planning to our elected officials. Prior to signing this proposed Memo of Agreement, our local transportation planning effort should be completed.

Therefore, we offer the following staff report at this time, including a summary of the information already compiled, staff recommendations for capital improvements prioritization and roadway designations, and proposed policies pertinent to transportation. We believe that each of our recommendations respond to obvious problems for which the alternatives are already apparent, are not in any sense premature, and therefore need not await completion of comprehensive planning in the larger sense.

A. List of completed transportation-related studies and plans:

1. Small-Cooley Transportation Plan - done in 1967 for the target year of 1980, whose roadway designations we presently use to insure that necessary right-of-way widths are obtained for the future.
2. 1976-1977 Transportation Study - identified locations where the transportation system was deficient at that time, and projected where deficiencies will occur within 20 years, even should scheduled improvements be completed.
3. Transportation Task Force Report - includes a wide range of recommendations which were made after receiving input from virtually all transportation planning agencies. This report has been reviewed by both planning commissions, both of which have passed recommendations on to their respective elected officials.
4. Studies by the State Highway Department:
   a. 1975 Origin and Destination Study (using 1974 traffic counts)
   b. 1975 Study of Sufficiency Ratings and Needs
   c. 5-Year Capital Improvements Plan, updated annually with input from both the City and County
   d. Coal Train Assessment
5. Miscellaneous single-purpose studies:
   a. Airport Master Plan, completed in 1975
   b. Horizon Drive Environmental Impact Statement - draft completed, but final go-ahead not yet received
   c. CH2M Hill's 1976 Traffic Safety Study
   d. Transit Feasibility Study, funded by Community Services, Inc.
   e. West Central Colorado Coal Environmental Statement, which addresses coal train traffic
6. City of Grand Junction's Capital Improvements Plan, with annual update.

II. Priorities for Local Action. (Items within each grouping are approximately equal in importance).

A. Highest Priority.

-Amend Roadway Designations (see attached exhibit). The 4-step sequence for most capital improvements projects is usually a) planning studies, b) right-of-way determination, c) design, while simultaneously obtaining right-of-way, and d) construction. Roadway Designations are critical to determining the amount of right-of-way which must be obtained.
-Proceed with the Transit Development Program (TDP).
-Initiate Bikeway Plan, as supported in Parks & Air Quality Plans.
-Synchronize lights on 7th, 12th, North, and Grand.
-Design and construct grade-separated Railroad crossing at 29 Road.
-Improve the at-grade crossing at Railroad and 30 Road, and the intersection of 30 Road and Highway 6 & 24.
-Design and construct extension of Horizon Dr. from Airport to Patterson to major arterial parkway standards.
-Upgrade Patterson from 29 Road to 24 1/2 Road to arterial parkway standards.
-Design Goat Draw corridor from State Highway 340 to Highway 6 & 50.
-Coordinate with the DRG & W to select additional crossing locations.

B. High Priority.

-Construct additional connectors between North Ave. and Patterson - both 15th St., and completing 28 1/4 Road between Orchard and Patterson.
-Improve River Road Bypass between 5th St. bridge and 24 Road (this is an alternative to the Highway 50 Bypass proposed by State Hwys.)
-Construct Goat Draw corridor.
-Improve Ute/Pitkin corridor - including signalization, channelization, signage, and parking limitations.
-Improve 24 Road from I-70 to Patterson to arterial standards.
-Design 29 Road river-bridge crossing.
-Improve B 1/2 Road between Highway 50 and 28 1/2 Road.

C. Medium Priority.

-Build 29 Road river-bridge crossing. Simultaneously design the connection of Horizon Drive with 29 Road. Subsequently, construct the 29 Road connection to Horizon Drive, and improve B 1/2 Road between 28 1/2 and 29 Roads.
-Upgrade Patterson Road from 29 Road to the I-70 Business Loop to arterial standards.
-Upgrade D Road from 15th St. to 32 Road to arterial standards.
-Revise intersection of Grand Ave., 28 Rd., and the I-70 Business Loop.
-Establish a transportation terminal for buses, taxis, and shuttles in the downtown area.

III. Priorities for Non-Local Action (i.e. State Highways) Which We Endorse

-Improve 1st Street from Pitkin to Grand, the intersection of 1st and Grand, and the circulation around the Railroad depot.
-Upgrade 32 Road from D Road to I-70 to major arterial standards.
-Improve signage on I-70 both east and west-bound.

IV. Policies.

1. Encourage a compact development pattern which can promote better use of the existing routes, optimize the future potential for public transit, and minimize total vehicle miles travelled and resultant air pollution.

2. Encourage the development of alternative modes of transportation, including public transit and recreational/commuter circulation systems for pedestrians and bicyclists. Encourage major employers to experiment with staggered work hours and car pool/van pool systems.

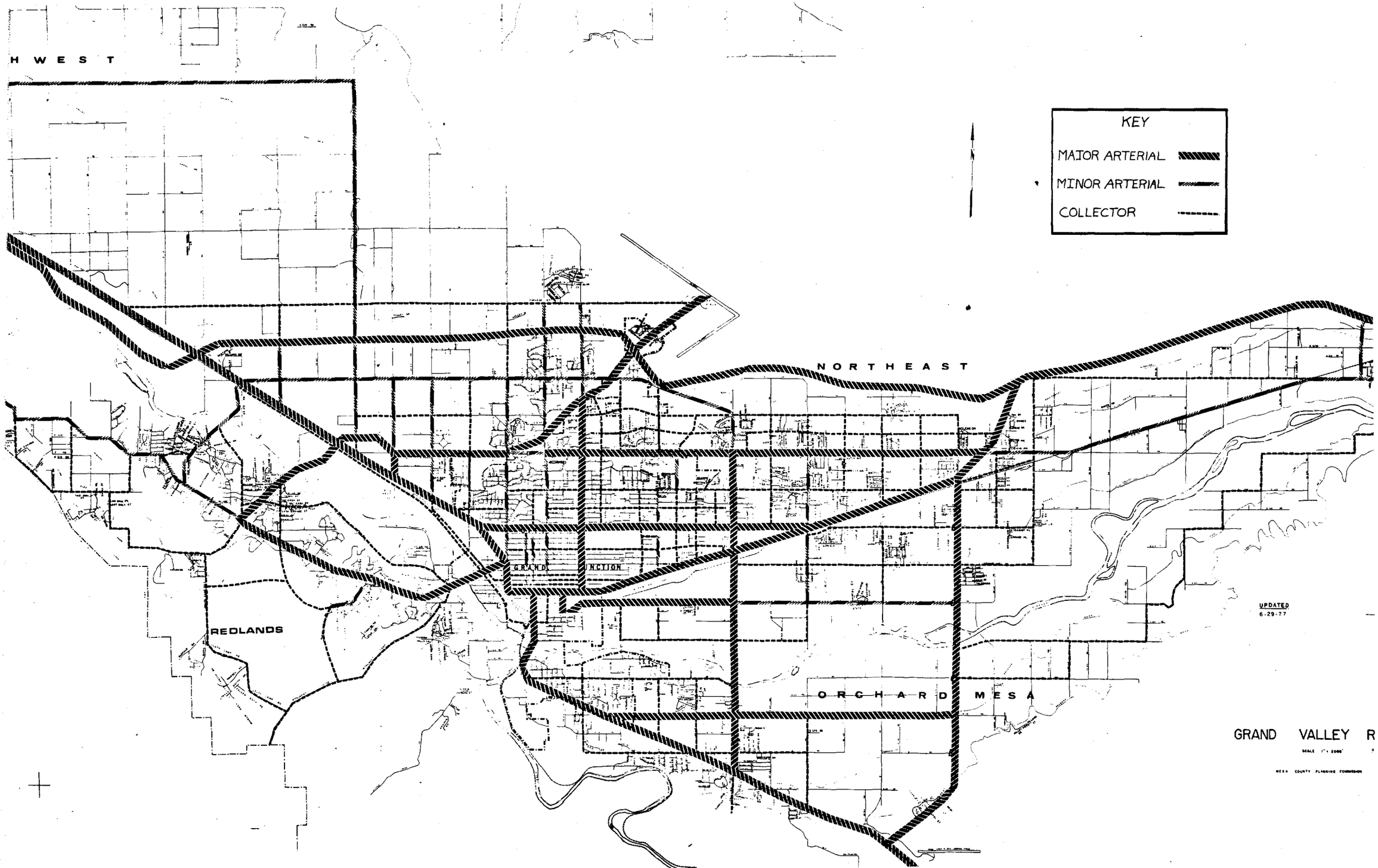
3. Discourage movement of fast-moving traffic through neighborhoods by developing a high-capacity arterial street system. Any arteries which unavoidably must traverse residential areas should be developed as parkways, with landscaped medians and limited access.

4. Improve traffic flow to minize air pollution by synchronizing lights, installing left/right turn lanes and acceleration/deceleration lanes, eliminating on-street parking on arterials, minimizing curb cuts through subdivision design, limiting accesses to major arterials, and other similar means.

5. Each individual development should be responsible to develop its access and perimeter streets in accord with the street Master Plan, as well as to pay a share of any off-site improvements necessitated by that development. Such financial share shall be proportional to the relative impact contributed by that particular project, and shall be determined by elected officials.

6. Commit funding in accord with the priorities identified in Part II and adopted Capital Improvements Programs. Alternative means available to obtain supplemental funds include an increased sales tax, a real estate transfer tax in the County, and/or creation of a special district for transportation.

7. Restrict residential development in the vicinity of Walker Field in accord with the Federal Aviation Authority, the Airport Authority, and the Airport Master Plan.


H W E S T
KEY
MAJOR ARTERIAL
MINOR ARTERIAL
COLLECTOR
NORTHEAST
GRAND JUNCTION
REDLANDS
ORCHARD MESA
UPDATED
6-29-77
GRAND VALLEY R
MESA COUNTY PLANNING COMMISSION

COMPARISON OF VARIOUS PROPOSED ROAD DESIGNATIONS

(This List Shows Only Differences Between Recommendations)

Street Section	T.T.F.	MCPC	GJPC	Ron Rish
24 (F to I-70)	Principal	Principal	Principal	Minor (Arterial) (still 4 lanes)
Southwest Bypass	Proposed Freeway	Medium Priority	No Meniton	No Mention
27/12th River Crossing	Proposed Principal	High Priority	Principal	No Mention
29 Road River Crossing	Proposed Principal	Low Priority	Principal	Major
29 Road RR Crossing	Proposed Principal	High Priority	Principal	Major
Horizon-29 Connection	Proposed Principal	Premature	No Mention	No Mention
F (26 - 27)	Principal		Principal	Minor
29 (F to 6-24)	Principal		Principal	Minor
North Avenue	Minor		Principal	Major
12th (F-Horizon)	Major		Principal	Minor
7th (Horizon to I-70)	Collector		Minor	Minor
D½ (29-32 Roads	No Mention	Collector	No Mention	No Mention
30 (E-D Roads)	No Mention		No Mention	Collector
B (27-28½)	No Mention		No Mention	Collector
25 and 26 Roads (North of I-70)	Collectors	Premature	No Mention	No Mention
30 and 32 Roads (River-Hwy 50)	Collectors	Premature	No Mention	No Mention
Grand (1st-12th)	Collector		Minor	Minor
Elm (7th to 28 Road)	No Mention		Collector	Collector
Colorado & Rood Ave. (7th-12)	No Mention		Local	Minor
Main (7th-12th)	Collector		Collector	No Mention