RSPA/VNTSC-SS-TM694-02

PB97-186498

Enhanced Planning Review of the Salt Lake and Ogden Metropolitan Area

Final Report

April 1996

prepared for:
U.S. Department of Transportation
Federal Transit Administration
Office of Planning
and
Federal Highway Administration
Office of Environment and Planning

prepared by:
U.S. Department of Transportation
Research and Special Programs Administration
Volpe National Transportation Systems Center

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ENHANCED PLANNING REVIEW OF THE

SALT LAKE AND OGDEN METROPOLITAN AREA

April 1996

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ACKNOWLEDGMENTS

This report is the second in a series of Enhanced Planning Reviews (EPRs) of major metropolitan areas produced for the Federal Transit Administration (FTA) and the Federal Highway Administration (FHWA) by the Volpe National Transportation Systems Center (Volpe Center), Research and Special Programs Administration, U.S. Department of Transportation. An earlier series of nine independent planning reviews of major metropolitan areas was published by the Volpe Center for the FHWA and FTA in 1994.

William Lyons is the Volpe Center Project Manager for the EPRs. Melissa M. Laube was the lead author and analyst for this report. Other contributors included Robert Dial of the Volpe Center and D. Tilly Chang of the Center for Transportation Studies, Massachusetts Institute of Technology, under contract to the Volpe Center.

Overall guidance for the EPRs, including production of this report, was provided by the Program Manager, Deborah Burns, and Sam Zimmerman, Director, both from the Office of Planning Operations, FTA; and Sheldon Edner and Barna Juhasz, Chief, both from the Metropolitan Planning Division, FHWA.

The federal review team -- consisting of staff from FTA Headquarters and Region VIII Offices; FHWA Headquarters, Region 8, the Utah Division; and the Volpe Center -- participated in all aspects of the EPR, including reviewing drafts of this report.

A draft of the Overview Report was provided to the Wasatch Front Regional Council, Utah DOT, and other participating major transportation agencies in the metropolitan area for review and comment. The Final Report adds background information for the observations and recommendations in the Overview Report and is written for public distribution. The assistance of local agency staff throughout the EPR is gratefully acknowledged. The Final Report, which was not reviewed in its entirety by the local agencies, is the responsibility of the federal agencies. Participating federal review team members are listed in the Introduction and state, regional, and local staff are listed in Appendix B.

Copies of the other reports can be requested from: Federal Transit Administration, Metropolitan Planning Division, fax (202) 493-2478 or Federal Highway Administration, Metropolitan Planning Division, fax (202) 366-7660.

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Glossary of Acronyms and Abbreviations

ADA	Americans with Disabilities Act
BMS	Bridge Maintenance System
CAAA	Clean Air Act Amendments of 1990
CMS	Congestion Management System
CMAQ	Congestion Mitigation and Air Quality Program
CO	Carbon Monoxide
DAQ	Utah Division of Air Quality
FHWA	Federal Highway Administration, US Department of Transportation
FTA	Federal Transit Administration, US Department of Transportation
GIS	Geographic Information System
HOV	High Occupancy Vehicle
IMS	Intermodal Management System
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991
MAG	Mountainland Association of Governments
MIS	Major Investment Studies
MOA	Memorandum of Agreement
MPO	Metropolitan Planning Organization
PTMS	Public Transit Facility Maintenance System
SIP	State Implementation Plan
SMS	Safety Management System
STP	Surface Transportation Program
TAC	Technical Advisory Committee
TDP	Transit Development Program
TIP	Transportation Improvement Plan
TCM	Transportation Control Measure
Trans Com	Transportation Coordinating Committee
UDOT	Utah Department of Transportation
US DOT	United States Department of Transportation
US EPA	United States Environmental Protection Agency
UTA	Utah Transit Authority
UWP	Unified Work Program
WFRC	Wasatch Front Regional Council
VMT	Vehicle Miles Traveled
Volpe Center	Volpe National Transportation Systems Center

Executive Summary

The Federal Transit Administration (FTA) and Federal Highway Administration (FHWA) have initiated a series of joint Enhanced Planning Reviews (EPRs) to assess the impact of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) on the planning processes conducted by the transportation agencies serving metropolitan areas. The EPRs are also intended to determine the effects of planning on transportation investment processes. The information collected in the EPRs is intended to be of assistance to individual metropolitan areas in their continuing efforts to improve transportation planning practice, and to federal agencies in formulating policy and identifying technical assistance needs among agencies engaged in metropolitan planning.

The EPR for Salt Lake and Ogden included a federal site visit from February 27 through March 3, 1995. At the conclusion of the site visit, the federal review team presented preliminary observations and recommendations to the local agencies taking part in the review. The team then formulated several additional observations as a result of the further review of documents and notes. These observations were incorporated into a draft Overview Report which was distributed for review and comment to the Metropolitan Planning Organization (MPO) and other local participants in the EPR. The Overview Report formed the basis for this Final Report, which describes the EPR in greater depth and is intended for public distribution.

The following is the summary conclusion and a complete set of the observations and recommendations presented in the Overview Report. The section where the observations and recommendations are discussed in context are noted in parentheses.

The transportation planning process in Salt Lake and Ogden addresses the need to maintain existing and future metropolitan area mobility. The MPO's committee structure provides for a high degree of coordination among the MPO and its partner agencies, which has resulted in the establishment of cooperative and collaborative approaches to most aspects of the planning process. The Wasatch Front Regional Commission produces a clear and informative TIP.There also has been progress in responding to the challenges of ISTEA, as exemplified in the financial analysis conducted in support of the Transportation Plan and TIP, preliminary efforts to incorporate Major Investment Studies in the planning process, and initiation of long-range transit planning. Potential areas of improvement include increasing the emphasis on multimodalism, which extends to bicycle and pedestrian planning, developing and integrating transit improvements in the Transportation Plan, beyond short-term improvements, and integrating transportation planning within a broader vision encompassing land use, environmental, and social goals. There is evidence of increasing public interest in metropolitan planning issues, which warrants development of a more proactive approach to public involvement.

A. Organization and Management of the Planning Process

1. Interagency Coordination and Cooperation: The Wasatch Front Regional Council (WFRC) and its partner agencies, the Utah Department of Transportation (UDOT) and the Utah Transit Authority (UTA), conduct a well-coordinated and cooperative transportation planning process through the policy and technical advisory committees of the WFRC. (III)

B. Development of the Transportation Plan, the Transportation Improvement Plan (TIP) and Unified Work Program (UWP)

1. Multimodal Planning: A greater emphasis on multimodal planning would improve future updates of the Transportation Plan, including, for example, elements addressing long-range transit, Americans with Disabilities Act (ADA), complementary paratransit, bicycles, pedestrians, and movement of freight/goods. The Transit Development Program (TDP) could serve as the first three to five years of the long-range transit master plan. (IV. A.)

2. Metropolitan Area Issues: The Transportation Plan for Salt Lake could establish a clearer relationship between recommended improvements and the area's needs, goals, and objectives, by including information and issues related to social, economic, and energy conditions, as well as other local factors that are relevant to transportation system planning. A more comprehensive context could facilitate public understanding of the planning process. (IV. A.)

3. Vision: The Plans do not emphasize visionary concepts of the future, but embody a practical perspective that addresses the needs associated with the expected continuation of prevailing development and travel behavior patterns. (IV. A)

4. Transportation Improvement Program (TIP): WFRC produces a clear and informative TIP. Future versions of the TIP should identify Transportation Control Measures (TCM) and ADA status, and denote the status of previously approved projects, which would improve the utility of the document as a management tool. (IV. B.)

5. Comprehensive Planning: Cooperative development of the TIP could be enhanced by increased involvement of the MPO in the programming of funds by the State and UTA, which accounts for the greatest share of transportation expenditures in the metropolitan area. (IV. B)

6. Bicycle and Pedestrian Facility Planning: WFRC's work program does not reflect the commitments in the Transportation Plan to develop bicycle and pedestrian plans. (IV. C.)

C. Financial Planning and Financial Constraint

1. Financial Projections: WFRC's financial analysis addresses ISTEA financial constraint requirements and is generally realistic. The $131 million federal earmark that recently has been authorized for light rail transit should be included in future financial projections. Estimates of growth in Sections 3 and 9 funding are optimistic. (V. A)

D. Major Investment Studies (MIS)

1. Interagency Cooperation: The MPO has made progress in addressing requirements. The informal process followed thus far is effective, particularly in terms of the degree of interagency cooperation achieved. (V.B)

2. Agreements: More formal definition and documentation of this process are recommended, particularly in terms of interagency roles and responsibilities, which would further enhance the effectiveness of this cooperative effort. (V.B)

E. Congestion Management System (CMS) and other ISTEA Management Systems

1. CMS: WFRC has made substantial progress in developing the CMS. (V.C)

F. Air Quality and Conformity

1. Interagency Agreement: WFRC, UDOT, and the Utah Division of Air Quality (DAC) should adopt an agreement on procedures for meeting air quality conformity requirements, including the development and implementation of TCMs. The discussions that took place during the EPR site visit indicate that lines of communication among the agencies are improving. (V.D)

2. Coordination of Data: WFRC and DAC should coordinate the use of demographic data prepared by the Governor's office to ensure the consistency of data cycles. (V.D)

G. Public Involvement

1. Public Involvement Initiatives: The success of recent grassroots conferences is evidence of previously untapped public interest in issues concerning growth, development, and transportation. WFRC should reassess its public involvement program and undertake new initiatives to make the planning process comprehensible and accessible to the general public. (V.E)

2. Follow-up to Conference: WFRC's participation in the second grassroots conference could be followed by additional proactive efforts to include those attending the conference in the MPO's continuing activities. (V.E)

3. Interagency Public Involvement Efforts: WFRC could seek opportunities to participate with UTA and UDOT in joint public involvement efforts. From the agencies' perspective, coordination can provide for some economies and a synergy of ideas. The potential benefit to the public would be a more coherent and understandable process. (V.E)

H. ISTEA Fifteen Factors

1. Integration of Factors: The current versions of the Transportation Plans consider the fifteen factors primarily in the context of an after-the-fact evaluation. In the time period following the development of the Transportation Plans, however, the factors do appear to have influenced the MPO's planning process, as reflected in efforts to improve the evaluation of social, environmental and economic impacts, provide for corridor preservation, address goods movement issues, and improve long-range transit planning. (V.F)

2. Goods Movement: A more aggressive approach to freight planning may be required if contacts with industry groups do not yield useful information on goods movement needs and issues. A broader perspective would address systemwide intermodal connections, facility impacts, and land use compatibility issues. (V.F)

3. Land Use: The MPO staff does a good job at reconciling local land use plans through its production of a regional land use map and should try to obtain policy board endorsement of its land use projections. WFRC could develop and analyze alternative land use/transportation scenarios, which could be presented in the Transportation Plan. WFRC has demonstrated strong initiative in using computer satellite imagery. (V.F)

4. Life-Cycle Costing: The MPO does not use life-cycle costing methods that can be applied systemwide across all modes. (V.F)

I. Integration of Strategic Transportation Planning

1. Transit Study: Recent joint initiatives by WFRC and UTA to improve long-range transit planning are necessary to address strategic transit development needs. The transit plan under development should be integrated with the officially adopted Transportation Plans for Salt Lake and Ogden. (VI)

J. Travel Demand Forecasting

1. General: The MPO's transportation modeling conforms to the state of the practice for MPOs of comparable size. The technical staff is knowledgeable and has successfully identified potential improvements. Continuation of efforts such as this and the recent home interview survey are necessary to maintain modeling capabilities at a high technical standard. Overall, the staff should strive to keep pace with progress in the discipline of travel behavior modeling. (VII)

2. Combine Models: The MPO should consider developing a single unified model for the entire Salt Lake and Ogden metropolitan area, which would simplify and improve the analysis of areawide impacts. As population grows and travel between the two areas increases, merging the two models will become increasingly critical. (VII)

3. Performance Indicators: The development of performance indicators based on modeling results, such as a congestion index, would be useful for application in the analysis of project alternatives and in benefit/cost studies. (VII)

I. Introduction

ISTEA significantly changed the law governing metropolitan transportation planning. In response to the changes introduced by ISTEA, FHWA and FTA issued revised planning regulations on October 28, 1993, setting new requirements for the transportation planning processes. The requirements are presented in 23 CFR Part 450 and 49 CFR Part 613, Statewide and Metropolitan Planning Final Rule. The Clean Air Act Amendments of 1990 (CAAA) also imposed rigorous new transportation planning requirements in metropolitan areas, particularly those that are designated nonattainment or maintenance areas for air quality.

In support of the implementation of the revised regulations, FHWA and FTA jointly established a schedule of EPRs. The EPRs are intended to determine the impact of planning on transportation investment processes. The EPRs also provide a technical assessment of the transportation planning and programming processes, including consideration of the six focal points identified by the FHWA and FTA Administrators for certification. The six focal points are: Financial Constraint and Financial Planning, Major Investment Studies, Congestion Management Systems, the Planning Process, and Links to the Conformity Requirements of the Clean Air Act Amendments of 1990; the Public Involvement Process; and the ISTEA Fifteen Planning Factors.[1] Of equal importance, EPRs will provide a forum for dialogue and the exchange of information on perspectives and concerns related to ISTEA between FTA and FHWA headquarters and field staff, and state and local officials responsible for metropolitan area transportation planning.

Additionally, EPRs will provide information for future long-term federal policy-making, including possible legislative and regulatory changes; identify national issues and trends; and document national case studies of best professional practice. This information will also be used to help identify how future federal technical assistance programs can best assist MPOs and other planning agencies in carrying out the requirements of ISTEA. Finally, EPRs are intended to support progress toward meeting ISTEA requirements.

The EPR has four parts: a review of planning documents, a site visit to the area, a summary draft Overview Report, and the issuance of this Final Report. At the conclusion of the site visit, the federal agency participants in the EPR presented preliminary observations and recommendations to the local agencies taking part in the review. Following the site visit, the team formulated several additional observations as a result of the further review of documents and notes. These observations were incorporated into a draft Overview Report distributed to the Metropolitan Planning Organization and other local participants in the EPR for review and comment. The Overview Report formed the basis for this Final Report, which describes the EPR in greater depth and is intended for public distribution.

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[1] An additional factor was added to the original fifteen factors identified in the Metropolitan Planning Final Rule after the Salt Lake and Ogden site visit was conducted.

This report presents the results of an EPR conducted jointly by FHWA and FTA in the [REGION] metropolitan area. This report considers the regional transportation planning process as it existed at the time of the site visit as well as future trends. The review team acknowledges that this is an evolving process.

A federal review team consisting of FHWA and FTA headquarters and regional staff, FHWA division staff, and US DOT/Volpe Center staff conducted the site visit on February 27 through March 3, 1995. The federal team consisted of:

Federal Transit Administration
Paul L. Verchinski, Office of Planning
Donald Cover, Region VIII Office

Federal Highway Administration
Robin Smith, Region 8 Office
James Biddiscombe, Utah Division Office

USDOT/Volpe Center
Melissa M. Laube
Robert Dial
D. Tilly Chang, Research Assistant (Massachusetts Institute of Technology)

William Lyons is the Volpe Center projectmanager for the EPRs [if not on site visit].

Local participants in the site visit included staff of the Wasatch Front Regional Council, which is the MPO serving the Salt Lake and Ogden metropolitan area; the Utah Department of Transportation, state and city agencies, and the region's transit operator. The review team also met with local elected officials and members of the general public. A list of local participants is provided at the end of this report.

A list of MPO members, participants in the EPR site visit, and the agenda for the site visit are provided in Appendices A, B, and C of this report. A list of the documents reviewed as part of the EPR is provided in Appendix D.

II. Local Conditions

A. Salt Lake and Ogden Metropolitan Area

The Salt Lake and Ogden area, comprising Salt Lake, Davis, and Weber counties, is the northern urbanized portion of Utah's Wasatch Front Region. (A map of the region is provided in Figure 1). The area is bounded by the Wasatch mountains to the east, the Great Salt Lake and Oquirrh Mountains to the west, the Weber County limits to the north, and the Farmington City line to the south. The Metropolitan Planning Organization (MPO) for the area is the Wasatch Front Regional Council (WFRC), which serves the broader region that includes the metropolitan area as well as Morgan and Tooele Counties, which are predominantly low-density suburban and rural areas.

The mountains and Great Salt Lake constrain the pattern of development in the growing Salt Lake/Ogden region. Construction in mountainous areas is difficult, due to slope instability,erosion, and drainage problems. Seismic conditions are another important consideration affecting development of all types of structures, including transportation facilities. The Wasatch Fault runs the length of the metropolitan area, creating a significant earthquake risk. The Great Salt Lake imposes additional restrictions on development, with the flat lake bed exposing land below 4,217 feet elevation to the risk of extensive flooding.

The distinctive physical characteristics of the region also create special environmental challenges. The mountains are important physical resources that are valued both by residents and the growing number of visitors to the area, who are attracted by the area's scenery and recreational amenities. The area is one of the nation's premier ski resort centers, and Salt Lake City has been designated as the host city for the 2002 Winter Olympics. The mountain areas also serve as a crucial source of the area's water supply, and the area around the lake includes extensive wetlands.

B. Projections and Forecasts

The population of the combined Salt Lake and Ogden metropolitan area was approximately 1.1 million in 1990. This total includes about 159,400 in Salt Lake City and 64,180 in Ogden City. The areas around Salt Lake and Ogden both are experiencing rapid growth. From 1970 to 1991, population increased by 60 percent in the Salt Lake Area and by 56 percent in the Ogden Area. High rates of growth are projected to continue in the future. By the year 2015, the number of residents is expected to increase by 49 percent in the Salt Lake Area and by 46 percent in the Ogden Area, compared to 1990 population figures.

In both the Salt Lake and Ogden Areas, employment growth has kept pace with that of population, which is a trend that is expected to continue. By 2015, employment is projected to increase by 63 percent in the Salt Lake Area and by 45 percent in the Ogden Area, for a total increase throughout the metropolitan area of over 296,000 jobs. The economy has been shifting from its traditional base in extraction industries and agriculture to services. The largest employers are the University

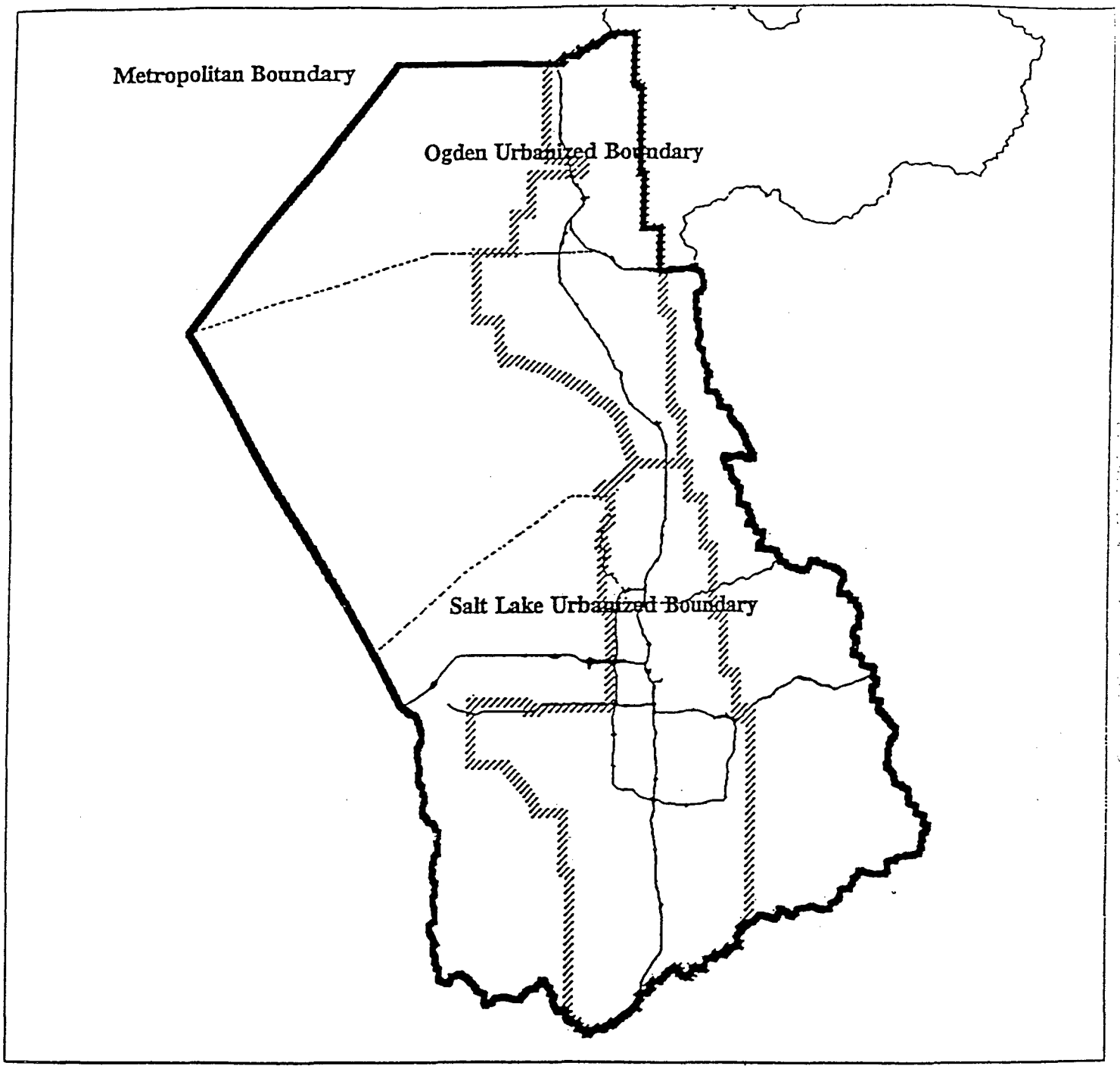

Figure 1. Salt Lake and Ogden Metropolitan Area

of Utah in the Salt Lake Area and government services, including Hill Air Force Base, in Ogden and its environs. State and local governments also represent a major source of employment in Salt Lake, as do several large corporations and the Salt Lake City International Airport.

Regional population and economic growth were concentrated in Salt Lake City and Ogden City until the 1950s and 1960s, at which time activity began to disperse from the central cities to smaller centers and suburban areas. This trend continued for over a decade, to a greater extent for population than employment. Population in the two central cities appears to have stabilized since 1980, and employment has grown. Both population and employment are projected to increase in Salt Lake City and Ogden City in the future, although not as fast as in outlying areas. As a result, the cities will remain important regional centers, but their relative share of the region's population and economic activity will decline.

Land use planning in the Wasatch Front region is the responsibility of local municipalities. WFRC develops regionwide land use forecasts by compiling local master plans. Master plans prepared by local governments show that most developable land is planned for low density residential use in both Salt Lake and Ogden. Some high density residential and commercial development is planned for Salt Lake City, Ogden City, and the I-15 and US 89 corridors. Additional commercial development also is anticipated throughout the metropolitan area to serve dispersed residential growth. Most of the expected increase in population is expected in suburban areas, with residential development in the Salt Lake Area forming an expanding semi-circle around the central city. Industrial land uses will continue to be concentrated along I-15.

C. Regional Transportation System

Highways

Several interstate highways serve as regional transportation corridors. I-15 is the north-south spine of the roadway network, connecting Salt Lake City with Ogden, and to the south, the cities of Provo and Orem. I-80, crossing I-15 in the east-west direction at the southern end of Salt Lake City, provides the only regional access through the Wasatch Mountains to the east. I-80 connects to I-84, which serves much of the traffic entering Ogden from the east. I-215 serves as a beltway to the southeast, southwest, and west of Salt Lake City. Other principal arterials, including state highways and U.S. 89, augment interstate roadways in and near the cities of Salt Lake and Ogden, providing connections to major activity centers, including the Salt Lake and Ogden CBDs, the University of Utah, and Salt Lake International Airport.

A major expansion of capacity on I-15 is planned that would add several new travel lanes. Additional planned highway projects involve expansion of the arterial systems in both Salt Lake and Ogden.

Public Transit

The Utah Transit Authority (UTA) currently provides 10.5 million miles of bus service and carries about 17.2 million riders per year in the Salt Lake Area. In the Ogden Area, UTA provides about 2.35 million miles of bus service and carries about 2.9 million riders per year. In both areas, bus ridership accounts for between one and two percent of total trips and between five and six percent of total work trips.

Salt Lake City is the hub of the public transit network. UTA provides local bus service on a modified grid system, with most routes beginning and ending in Salt Lake City's downtown area. The local routes serving Ogden meet downtown on Washington Boulevard. The service attracting the greatest ridership in the UTA system is express bus, including intercity, limited stop, and worker express, which serves major regional employment centers. Intercity service operates via the freeways connecting Provo, Ogden, and Tooele with Salt Lake. UTA also operates a number of privately-subsidized special services on a limited schedule to attractions in the region, including ski resorts.

Many of UTA's fixed route bus services currently are wheelchair accessible, and most of the bus fleet will be accessible by 1997. In addition, UTA provides paratransit service throughout the metropolitan area for passengers with disabilities. These services are provided either by UTA directly, or through contractual agreements, with the arrangements varying by county. In 1993, these paratransit services traveled a total of 1,851,000 miles and served 280,000 passengers.

While the metropolitan area currently has no passenger rail or fixed guideway facilities, a light rail transit line is planned for the Union Pacific rail corridor between Salt Lake City and Sandy, which is approximately nine miles to the south. Bus service expansion and other public transit service improvements also are planned throughout the metropolitan area.

Air Travel

The metropolitan area is served by Salt Lake International Airport and municipal airports in both Salt Lake and Ogden. Salt Lake International Airport is approximately five miles from the downtown area, near the I-215/I-80 interchange. The Salt Lake municipal airport is farther from the central city, in West Jordan on state highway 154. The Ogden municipal airport is on I-15 at the Ogden city limits. UTA operates five bus trips per day serving Salt Lake City International Airport. WFRC maintains a Metropolitan Airports System Plan for a nine-county region.

Bicycles and Pedestrians

Salt Lake City has designated a series of pavement-striped bicycle routes. In addition, several bicycle facilities have been provided or planned in the Salt Lake area, including bicycle/pedestrian pathways along the Jordan River Parkway and trail enhancement in Emigration Canyon. Surveys

conducted in Salt Lake indicate that potential bicycle markets are strongest in the vicinity of the University of Utah and in the downtown area.

III. Organization and Management of the Planning Process

The Councils of Government in Weber, Morgan, Davis, Salt Lake, and Tooele Counties established the WFRC in 1969. The WFRC is composed of 16 locally-elected officials providing proportional representation from its five-county area, and is the official policy body for transportation planning in the metropolitan area. The Governor of Utah designated the WFRC as the MPO for the Salt Lake and Ogden metropolitan area in December 1973. A Memorandum of Agreement (MOA) was executed in April 1988 by the WFRC, the Utah Department of Transportation (UDOT), and the Utah Transit Authority (UTA), describing the responsibilities and procedures to be followed in the planning process. This agreement is still in effect. In addition to the MOA, the WFRC has contracts with UDOT and UTA defining the working and financial arrangements among the agencies. The contracts were approved in 1978, and currently are being updated to take into account changes in the federal funding programs of ISTEA. A contract with the State Division of Air Quality (DAQ) also is being negotiated.

WFRC has a policy advisory body, the Transportation Coordinating Committee (Trans Com), which is responsible for the review and development of recommendations regarding all plans and programs that come before the WFRC policy board for approval. The committee also serves as the forum for discussion of major transportation issues and policies. Trans Com's membership includes representatives from the five member counties, the State Transportation Commission, UTA, FHWA, and airport interests. Coordination of the MPO's transportation program occurs largely within Trans Com.

Technical coordination is provided by two Transportation Technical Advisory Committees (TACs), one representing Salt Lake and the other, Ogden. The TACs, which serve Trans Com and the WFRC policy board, consist of engineers and planners from UDOT, UTA, DAQ, other agencies, and each of the jurisdictions in the MPO. According to WFRC staff, the actions of the Council and its committees generally have reflected a commitment to cooperation in the pursuit of common goals. Representatives recognize the interdependence of the jurisdictions in the metropolitan area, as demonstrated by their receptivity to requests from Salt Lake City for expenditures on necessary transportation improvements.

WFRC works closely with UDOT and UTA, both of which are represented on Trans Com and the TACs, as noted previously. Trans Com meets with the State Transportation Commission and UTA's Board of Directors once a year. The planning process is staffed by WFRC with support from UDOT and UTA, primarily in the development of socioeconomic and demographic data and short-range transit planning. UDOT applies for federal planning funds, which are then passed through to WFRC. As the administrator of federal funds, UDOT reviews and coordinates plans and programs of the WFRC for compliance with federal regulations. UDOT also assists WFRC with required contracts and agreements.

Observations and Recommendations

1. Interagency Coordination and Cooperation: The MPO and its partner agencies, UDOT and UTA, have established a collaborative approach to transportation planning and work in close cooperation through Trans Com and the Technical Advisory Committees.

IV. Development of the Transportation Plan, Transportation Improvement Program and Unified Work Program

A. Transportation Plan

WFRC's technical staff prepares separate Transportation Plans for Salt Lake and Ogden, because of the different character of transportation conditions in each of these areas. Traffic congestion and demand for transit services are substantially greater in Salt Lake, which has over triple the population and employment of Ogden. The TACs coordinate Plan development and evaluate the completed products for recommendation to Trans Com. Current Plans were adopted on an interim basis in 1993 and were updated with only minor changes in 1995. These Plans represent WFRC's first attempt to respond to ISTEA and Clean Air Act Amendment requirements.

The Plans follow the same format and share much common text, discussing goals and objectives, characteristics of the areas, projected long-range needs, management systems, finances, program recommendations, and plan evaluations. The four goals and supporting objectives identified in the Plans, which are common to both, were developed by WFRC in 1972-73, and have not been revised under ISTEA. The four goals are to provide:

- An efficient, safe, and economical transportation. Supporting objectives include minimizing congestion, travel time, accidents, and capital costs.

- A transportation system with minimal adverse impact on environmental, sociological, and aesthetic values. Objectives include minimizing pollution, energy consumption, community disruptions, and property dislocations.

- A balanced, coordinated transportation system (auto, air, transit). The objectives relate to multimodalism and providing an equitable distribution of transportation services.

- A transportation system to complement desired community development patterns. Objectives include providing consistency with land use plans and accessibility to community services.

Development of the Plans began with the forecasting of highway system capacity needs through the year 2015. Travel forecasting models were used to predict traffic conditions in 2015, assuming the existing roadway network augmented by committed roadway capacity expansion projects. Alternate highway improvements then were identified and evaluated, resulting in a recommended long-range highway element for both Salt Lake City and Ogden.

The Plans summarize the overall conclusions of the forecasting process, in terms of highway capacity needs, but do not identify alternatives or relate recommended projects and programs, or the recommended plan as a whole, to policies or evaluation criteria. Criteria used in the

evaluation of highway projects are identified, but the application of these criteria is not described. Recommendations include a future street and highway plan, as well as congestion management strategies. Transit is addressed only in a broad outline of needs,objectives, and priorities, but the Plans include a commitment to develop a long-range transit master plan, as well as bicycle plans for both Salt Lake and Ogden. The existing bicycle plan for the metropolitan area is essentially a policy document. According to the Transportation Plans, the new bicycle plans will include a system of routes, implementation schedules, and recommended policies to integrate bicycles into the traditional auto-oriented roadway system. The Plans do not address pedestrian circulation issues.

Recommendations in both Salt Lake and Ogden Plans include the following:

- future street and highway plan, including required future rights-of-way (the only new facilities identified are those that substantially increase capacity through the addition of highway lanes or entirely new highway construction);

- congestion management strategies, estimated to cost about $1.25 million per year;

- pavement, bridge, and safety estimated costs, based on output from respective management systems, which currently are operational only for selected categories of facilities and locations;

- transportation enhancements: eligibility requirements and funding availability are discussed, and projects programmed for 1994 are identified;

- transit service expansion objectives and priorities for 2015 are described generally, and a commitment is included to develop a transit master plan for the period after 2015.

Observations and Recommendations

1. Multimodal Planning: A greater emphasis on multimodal planning would improve future updates of the Transportation Plans, including, for example, elements addressing long-range transit, Americans with Disabilities Act (ADA) complementary paratransit, bicycles, and pedestrians. The Transit Development Program could serve as the first three to five years of the long-range transit plan.

2. Metropolitan Area Issues: The Transportation Plans could establish a clearer relationship between recommended improvements and the area's needs, goals, and objectives, by including information and issues related to social, economic, and energy conditions, as well as other local factors that are relevant to transportation system planning. A more comprehensive context could facilitate public understanding of the planning process.

3. Vision: The Transportation Plans do not emphasize visionary concepts of the future, but embody a practical perspective that addresses the needs associated with the expected continuation of prevailing development and travel behavior patterns.

B. Transportation Improvement Program

WFRC prepares a single Transportation Improvement Program (TIP) for the combined Salt Lake and Ogden metropolitan area, in cooperation with UDOT and UTA. The TIP is a five-year program of highway, transit, aviation, and nonmotorized (i.e. bicycle and pedestrian) projects, funded through federal, state, and local programs. The document is updated each year; the current TIP covers the period from 1995 through 1999. The TIP development process includes review of the State Air Quality Implementation Plan (SIP) to identify required Traffic Control Measures (TCMs).

Responsibility for identifying and developing Federal-Aid transportation projects is divided among WFRC and its partner agencies. WFRC is responsible for the Congestion Mitigation/Air Quality Program (CMAQ) and the urban component of the Surface Transportation Program (STP). UDOT prepares the other Federal-Aid state highway programs under the guidance of the State Transportation Commission, including Interstate Maintenance, National Highway System, other STP projects, and Transportation Enhancements. UTA develops the programs receiving Federal-Aid transit operating and capital assistance. WFRC has the opportunity to exercise only indirect influence on the programs developed by UDOT and UTA, through its role in reviewing and approving the TIP.

The TACs evaluate potential STP and CMAQ projects from the long-range element of the Transportation Plan, assign priorities within each funding category, and recommend the highest ranked projects to Trans Com for inclusion in the TIP. The MPO uses cost-benefit analysis as part of the process of ranking STP projects. CMAQ program funds have been used for TCMs and projects within non-attainment areas, including signal coordination, park-and-ride lots, and ridesharing programs.

According to WFRC staff, UDOT provides timely information on the expected allocation of funding from State and other sources to projects within the metropolitan area. UDOT also provides limited information on how projects are selected for several programs under its purview, specifically bridge, rehabilitation, and reconstruction projects. Preservation is an explicit UDOT priority. The criteria used in prioritizing projects intended to add or expand capacity is less clear. UDOT briefs the TACs on its project selection process.

The transit element of the document corresponds to the Transit Development Program (TDP) recently developed by WFRC and UTA. Forecasts performed in conjunction with the TDP indicate that UTA can fund existing service and expansion plans included in the TIP. Implementation of an I-15 corridor light-rail line will require bonding and Section 3 funds. It is

assumed that Section 9 assistance will be at authorized levels through 1997, and will be held constant thereafter, except for a $1 million annual increase beginning in 1999 to reflect revenue mile increases. The financial analysis in the TIP indicates that anticipated federal apportionments will meet planned federal expenditures for both highways and transit.

FHWA and FTA have determined that the projects for Davis and Salt Lake Counties included in the initial version of the 1995-1990 TIP, which was developed to be consistent with the Transportation Plan, did not conform to the SIP. Therefore, for these counties, the approved TIP includes only "grandfathered" projects or projects that are specifically exempt from conformity. Projects programmed for Weber County were found to conform. The MPO is working with the Utah Department of Air Quality (DAQ) to address conformity requirements.

The 1995-1999 TIP fulfills the requirement of including all relevant projects, regardless of funding source. Comprehensive information is provided about projects and funding, in the form of maps, diagrams, and text. The county Councils of Government have an opportunity to review and comment on the TIP, prior to recommendation of the document by Trans Com to the WFRC policy board. The WFRC-approved TIP is reviewed by DAQ and the Governor for final approval.

The 1995-1999 TIP does not identify ADA projects and TCMs, nor does it provide information on project implementation status, which would increase the utility of the document as a strategic management tool. Project status is addressed, however, in the monthly meetings of the TACs, Trans Com, and the WFRC policy board.

Observations and Recommendations

1. TIP: The MPO produces a clear and informative TIP. The TIP should identify TCMs and ADA projects, and denote project status.

2. Comprehensive Planning: Cooperative development of the TIP could be enhanced by increased involvement of the MPO in the programming of funds administered by the State and UTA, which account for the greatest share of transportation expenditures in the metropolitan area.

C. Unified Work Program

The Unified Work Program (UWP) describes all MPO planning activities for the Salt Lake and Ogden Metropolitan Area in the 1995 program year. WFRC prepares the UWP in cooperation with UDOT and UTA. Funding from all sources is taken into account, including federal and state assistance programs and local sales tax revenues, except for Federal Aviation Administration (FAA) support for Metropolitan Airports System Planning, which is administered on a different grant cycle than the UWP fiscal year. The UWP specifies budgets and staff levels of effort for all

of the MPO's other activities.

The document covers development of all MPO products, other than the Metropolitan Airport Systems Plan, including the UWP and other administrative materials, the Transportation Plan, TIP, Major Investment Studies (MIS), management systems, and air quality conformity determination. A consistent format is used to document each planning activity in terms of objectives, intermediate and final products, background, work statement, responsible agency, and level of effort. The background discussions provide a context for each work program element, including a narrative description of the work to be performed, the purposes it is intended to serve, and its genesis. The document is comprehensive, informative, and clear in its presentation.

The UWP does not include an element for bicycle and pedestrian planning, and the MPO currently is not engaged in a substantial effort to plan for these modes, although there are commitments in the Transportation Plans to develop detailed plans for bicycle transportation.

Observations and Recommendations

1. Bicycle and Pedestrian Facility Planning: The UWP should reflect the commitments in the Transportation Plans to develop bicycle and pedestrian plans.

V. FHWA and FTA Administrators' Focal Points

The FHWA and FTA Administrators have identified six focal points for federal certification reviews being conducted in metropolitan areas. One objective of the EPRs is to provide a base of information that will serve as a prelude to the certification reviews. The focal points are:

- Financial Planning and Financial Constraints
- Major Investment Studies
- Congestion Management Systems and other ISTEA Management Systems
- Air Quality and Conformity
- Public Involvement
- ISTEA Fifteen Factors

The following sections describe how the regional transportation process in Salt Lake and Ogden is addressing each of the focal points.

A. Financial Planning and Financial Constraint

The Transportation Plan, TIP, and related studies produced by the MPO have addressed financial constraint and indicate that proposed plans and projects can be fully funded. The revenue analysis takes into account all funds provided from federal, state, and local sources. Cost projections were based on estimated project costs in conjunction with the existing allocation of funds to programs. The process used to develop revenue and cost projections is summarized below, including key assumptions and factual information upon which the analysis is based.

Revenues

WFRC developed revenue projections through a three-step process: (1) estimation of total revenues provided from federal, state, and local sources; (2) allocation of statewide revenue to Salt Lake and Ogden areas, and determination of the percentages available for capital expansion projects; (3) discounting of revenues to present value for comparison with cost estimates.

Highways

Projected year 2015 revenues for highways total $5.6 billion, which is predicated on a substantial increase in future funding, as follows:

- Federal fund apportionments under ISTEA will grow 1 percent annually for most programs, and the state's 2015 state obligation authority will approach the level of future apportionments.

- Gasoline and special fuel taxes available for highway funding will increase by five

cents per gallon every five years, beginning in 1995. This assumption is based on historical trends. While the legislature has not actually increased taxes since 1987, population-related growth in gasoline consumption made it possible to pass a $60 million general revenue allocation equivalent to the amount that would have been available from a five-cent tax increase.

- Other State revenues were assumed to increase at moderate rates. User fees and permit revenues were assumed to grow at rates consistent with historical trends, yielding a total of $441.7 million in 2015. Recent revenue distributions allocated sixty-nine percent of this sum to UDOT, 8 percent to other state agencies, and the remaining twenty-three percent to the city/county Class B and Class C programs, on the basis of local population, road mileage, and land area. The MPO also forecasts that the State will provide $20 million per year from the general fund for highway improvements through the year 2010. Based on an agreement with the Planning Division of UDOT, the MPO projects that the Wasatch Front Region will receive 60 percent of the state's highway funds over the first ten years of the period covered by the Transportation Plan, and 40 percent over the following ten years.

- Another source of revenue for local roadway projects is the general funds of the counties and cities. The MPO calculated local revenue as a percentage of state revenues, projecting increases proportional to population growth.

Transit

UTA receives revenues to support its operations and capital projects from a local 1/4 percent sales tax, FTA Section 3 and Section 9 funds, fare revenue, and other sources, such as interest and advertising. Section 3 funds are assumed to be available for fixed guideway projects over the next 22 years. UTA also expects to receive additional Section 3 funds for major bus purchases and other capital facilities. Total revenues available for transit operations are projected to be $174 million in 2015. Between 1995 and 2015, a total of $363 million in Section 9 funding and $46 million in Section 3 bus funding are expected. The total transit funding anticipated from all sources over this same time period is approximately $3 billion.

The major revenue assumption incorporated in the transit revenue projections is the approval by the electorate of a 1/4 cent increase in the local sales tax, doubling the current tax base dedicated to transit, beginning around the year 2000. The assumption was applied in the estimate of Section 9 funds, which are expected to increase as a result of increased revenue vehicle miles made possible by the additional 1/4 cent sales tax revenue. Other revenues from advertising, special services, and interest earnings were estimated to be 1% of total annual operating revenues. The assumed increase in sales tax revenue is critical to the conclusion that the planned light-rail line can be fully funded. The MPO has suggested, however, that cutbacks in planned bus service expansion could be used to fund the fixed guideway project, if the sales tax increase is not approved.

Costs

For highways, the analysis included estimated project capital costs, maintenance programs, and management systems costs. To estimate overhead costs, a 15% rate was applied across the board. New highway capacity needs were estimated for collector and arterial roadways, but not for local streets, which were assumed to be funded by private developers. Highway maintenance costs were estimated at $1000/lane mile and preservation costs at $5,000-12,000/year per lane mile, applied to total lane miles, which are assumed to grow at one percent annually. These estimates are based on UDOT and Highway Performance Monitoring System data, supplemented with information on local roadways collected from local traffic departments.

Transit cost projections take into account operations and maintenance and capital costs for both bus and planned fixed guideway services. The TDP provided transit cost figures for the near-term, serving as an interim PTMS. The I-15 Corridor Project Environmental Impact Statement (EIS) financial analysis, which included cost estimates for the proposed light-rail transit project, was the source of cost data for transit capacity expansion. Transportation Enhancement Program costs also were estimated, based on the region's limited experience with this program.

Observations and Recommendations

1. Financial Projections: The financial analysis performed by the WFRC is comprehensive and generally realistic. The current $131 million federal earmark authorized for light rail transit is not included in future financial projections. The MPO has optimistic estimates of growth in Section 3 and Section 9 funding.

B. Major Investment Studies

At the time of the site visit, the MPO identified eight corridors where Major Investment Studies (MIS) are necessary: seven of these are in Salt Lake and one in is in Ogden. EIS are underway for projects that already have been planned in half of the corridors. WFRC is working with the preparers of the EIS to meet MIS requirements. This process has not resulted in the addition of any new alternatives, either because the original analysis was sufficiently broad (in the case of I-15), or other alternatives were not viewed as being appropriate. WFRC perceives that documentation of these conclusions will be a challenge. In the case of the corridors where the EIS process has not yet started, the WFRC is working to obtain the commitment of project sponsors to performing MIS. At the time of the EPR site visit, WFRC expected to begin at least one of these studies, and perhaps as many as three, by 1996. Five MIS actually are underway as of April 1996.

The MPO has expressed the need for guidance regarding several aspects of MIS:

- level of effort and detail required in the environmental components of the MIS;

- role of interagency and public involvement in designating EIS corridors;

- identification and narrowing of alternatives to be considered;

- role of resource and permitting agencies.

Observations and Recommendations

1. Interagency Cooperation: The MPO has made progress in addressing MIS requirements. The informal process followed thus far is effective, particularly in terms of the degree of interagency cooperation achieved.

2. Agreements: More formal definition and documentation of this process, particularly in terms of interagency roles and responsibilities, would further enhance the effectiveness of this cooperative effort.

C. Congestion Management System and Other ISTEA Management Systems

UDOT recently has prepared work plans for each of the six management systems described under ISTEA, with assistance from WFRC. WFRC is responsible for the development and implementation of the Congestion Management System (CMS) for Salt Lake and Ogden. The plans for all of the management systems define tasks to be performed, responsibilities, and schedules. The task outline includes the following components:

- identify performance measures and standards;
- collect data to monitor and evaluate system performance;
- identify deficiencies and needs;
- implement strategies;
- evaluate the effectiveness of implemented strategies.

The management systems incorporate a location referencing system, which will allow the systems to cross-reference information and organize data uniformly by location. UDOT and WFRC already have in place elements of management systems for congestion, pavements, bridges, safety, and public transit facilities, as follows:

- WFRC has been using an interim congestion management system (CMS), which has relied on travel demand modeling data to identify areas of existing or near-term congestion, using interim standards and measures. The interim CMS will provide a basis from which WFRC, in cooperation with UDOT, will develop the regional CMS for the Salt Lake and Ogden metropolitan area, based on the work plan adopted in December 1994. A subcommittee has been organized from the technical advisory committees to oversee the development of performance measures and the execution of other tasks. A GIS is planned as part of the data collection and travel model validation

effort associated with the CMS. The MPO has expressed uncertainty regarding how to integrate the CMS with the Public Transit and Intermodal Management Systems.

- A Pavement Management System currently is operational for state system highways only. The system incorporates five performance measures: ride, distress, structural capacity, rut depth, and skid resistance. The analysis package contained in the system can evaluate the system impact and performance of difference treatments, and rank needs and alternative investments according to priority. UDOT is leading a multiple agency effort to expand the system to cover the National Highway System and other categories of roadways. WFRC and the state's other two MPOs are active participants in this process. WFRC will rely on UDOT for data on the state highway system and plans to hire a contractor to collect pavement condition data for all other roads eligible for federal aid. In addition, WFRC is compiling an inventory of local roadway characteristics based on information collected from local governments.

- UDOT has established a Bridge Management System (BMS) for all federal-aid bridges. The system meets all federal bridge reporting requirements. An important objective of the new BMS will be to improve the method by which projects are prioritized.

- UDOT has an accident-reporting system, which will be the basis for the Safety Management System (SMS). The existing system includes a database of accident type, location, severity, and other factors for all accidents throughout the state. An important feature of the system is its capability to perform accident analysis and estimate expected accident rates.

- The TDP, which currently is being updated by WFRC, was planned at the time of the site visit as a starting point for the Public Transit Facilities Management System (PTMS). The TDP will recommend transit service improvements for the next five years and will include inventories of buses, support vehicles, maintenance facilities, park-and-ride lots, transit centers, and bus stops. Development of the PTMS was cancelled in March 1996.

- The inventory of physical facilities needed for the Intermodal Management System (IMS) was not developed at the time of the EPR site visit, and had been delayed relative to the schedule included in the system work plan.

Observations and Recommendations

1. CMS: WFRC has made substantial progress in developing the CMS and appears to be maintaining the schedule established in its system work plan.

D. Air Quality and Conformity

At the time of the EPR site visit, there were four non-attainment areas for different pollutants in

the Salt Lake and Ogden metropolitan area, and one additional pending non-attainment area, as follows:

- Salt Lake City -- not-classified CO non-attainment
- Ogden City -- moderate CO non-attainment
- Salt Lake County and Davis County -- moderate ozone non-attainment (redesignation to attainment pending)
- Salt Lake County -- moderate fine particulate (PM_{10}) non-attainment
- Weber County -- pending redesignation to PM_{10} non-attainment

General and Transportation Conformity State Implementation Plan (SIP) elements and a Weber County PM_{10} SIP were pending at the time of the EPR site visit. Additional air quality elements in progress included the CO redesignation requests, corresponding maintenance plans, and a PM_{10} SIP revision for Salt Lake County. Conformity of the Transportation Plan and TIP lapsed in Salt Lake and Davis Counties in November 1994. The switch to using the updated air quality forecasting model (Mobile 5.0a) required by the U.S. Environmental Protection Agency (US EPA) raised the forecasted future level of nitrogen oxides and PM_{10}, which contributed to conformity issues and problems. Conformity of the Plan and TIP had been redetermined for Weber County at the time of the EPR site visit, and for Davis and Salt Lake Counties, and Salt Lake and Ogden Cities in October 1995.

Cooperation between the MPO and DAQ has been strained by philosophical differences regarding air quality improvement strategies and priorities. These differences which became most apparent after the ozone maintenance plan became the subject of a lawsuit. An unresolved source of contention is the reluctance of the metropolitan area's County Commissioners to endorse Enhanced Inspection and Maintenance, which is assumed in the ozone maintenance plan. There is evidence that cooperation between the agencies is improving, however, as reflected by their joint drafting of a Memorandum of Agreement (MOA) governing the process to be followed in addressing conformity requirements. The MOA, which is under review by the policy boards of WFRC and DAQ, defines the responsibilities of both agencies and sets forth a process for conflict resolution. The EPA has indicated to WFRC that it views the Conformity SIP as a forum in which to resolve disagreements of the type that have arisen to date.

The MPO and DAQ both model air quality and are, with one exception, consistent in their use of input data and technical methods. The demographic projections updated by the Governor's office every six months may be available at different points in the two agencies' planning cycles, so that they sometimes use different versions of these input data. The technical staffs of the agencies are working to eliminate this discrepancy by improving coordination of their planning cycles.

Observations and Recommendations

1. Interagency Agreement: The MPO, UDOT, UTA, and DAQ should adopt an agreement on procedures for meeting air quality conformity requirements, including the development and implementation of TCMs. The discussions that took place during the EPR site visit indicate that lines of communication among the agencies are improving.

2. Coordination of Data: The MPO and DAQ should coordinate the use of demographic data prepared by the Governor's office, to ensure the consistency of data cycles.

E. Public Involvement

WFRC has an official policy statement governing public involvement. In accord with this policy, the MPO's public involvement program consists of the following actions:

- Public Meetings - WFRC holds an annual public meeting in both the Salt Lake and Ogden Areas to review the planning process, including growth assumptions and other technical aspects of the Transportation Plan. Another purpose of this meeting is to receive comments on the TIP. WFRC's promotion of the meeting is through newspaper advertisements, announcements sent to the media, and direct mailings to a list of neighborhood and minority groups, environmental organizations, and unaffiliated citizens who have demonstrated an interest in transportation issues.

- Direct Mailings - WFRC sends a summary of the Transportation Plan and TIP to groups and individuals who are on the mailing list for public meetings.

- Media - The staff attempts to maintain a working relationship with the regular reporters who cover regional issues.

- Newsletter - Newsletters have been prepared on occasion to explain major issues to a broad audience. The newsletter is a means of reaching people on a 1500-person mailing list, and also of encouraging media coverage.

- Participation in Specific Studies - The MPO has found that one of the most effective ways of interacting with the public is to include private citizens on teams preparing land use master plans, EISs, or other special projects. Representatives from the WFRC also are available to meet with civic and interest groups upon request.

There is no citizens advisory committee or other forum for continuing public involvement. WFRC became discouraged by its experience years ago in working with an advisory group of this type, because it perceived the participants in the process as being unrepresentative of the general population.

Response to WFRC public involvement efforts generally has been weak. Last year, however, the MPO participated in a local conference on population and growth that was organized at the grassroots level and attracted over 400 people. During the EPR site visit, the MPO explained that it would be taking an active role in a follow-up conference in March entitled "Future Moves," which was being promoted as a "grassroots conference on critical Wasatch Front transportation issues." The conference drew an audience of approximately 250 people, over 50 of whom volunteered to work on the development of a strategic plan for a more sustainable region.

In addition to its participation in Trans Com and other interagency forums, UTA has undertaken a community involvement program of its own that has featured a number of initiatives to foster close communications with the public and elected officials. One important component of this effort is a media campaign featuring television commercials that was in effect at the time of the EPR site visit. The purpose of this effort is to increase public awareness and use of transit services. This campaign was based on local focus group research.

Observations and Recommendations

1. Public Involvement Initiatives: The success of recent grassroots conferences is evidence of previously untapped public interest in issues concerning growth, development, and transportation. WFRC should reassess it public involvement program and undertake new initiatives to make the planning process comprehensible and accessible to the general public.

2. Follow-Up to Conference: The MPO's participation in the second grassroots conference could be followed by additional proactive efforts to include those attending the conference in the MPO's activities.

3. Interagency Public Involvement Efforts: The MPO could seek opportunities to participate with UTA and UDOT in joint public involvement efforts. From the agencies' perspective, coordination can provide for some economies and a synergy of ideas. The potential benefit to the public would be a more coherent and understandable process.

F. ISTEA Fifteen Factors

In the current version of the Transportation Plans for Salt Lake and Ogden, all of the factors were considered in a retroactive evaluation of recommended programs. A number of the factors also have been integrated into the planning process to a significant degree, a few since adoption of the Transportation Plan. The UWP includes mention of the need to "fully address" the factors as part of its continuing long-range planning efforts. The approach to each factor and its current status are summarized below, including progress that has been achieved since the 1993 Plan was prepared.

- Preservation and Better Use of Existing Facilities: The Plan identifies a two-fold

strategy that is in effect to maintain and enhance the performance of existing facilities: improving system management and efficiency, which typically increases the effective capacity of existing roadways, and demand management.

- Energy Conservation: Forecasts performed in conjunction with the Plan indicate that recommended long-range highway improvements will reduce gasoline consumption by increasing highway speeds, compared to a baseline future scenario consisting of existing and committed projects. The MPO and UTA have made a special effort to promote ridesharing, which included outreach to major area employers.

- Congestion Relief: As with energy conservation, the long-range plan is forecast to perform better than the future baseline condition, as indicated by higher travel speeds. WFRC considers the Congestion Management System to be a key component of its strategy to reduce congestion.

- Transportation Enhancements: WFRC participates actively on the UDOT committee that administers these funds. The Transportation Plan lists eligible activities, briefly identifies four projects programmed for 1994, and provides an estimate of available funding. The WFRC encourages local development of project proposals. The state decision process involves the evaluation of written materials and oral presentations by sponsors of potential projects. Bicycle trail proposals have fared well in this process.

- Effects of all Projects: The Transportation Plan and other products of the planning process include all projects in the area regardless of funding source.

- Access to Major Facilities: The Plan states that access to major intermodal facilities in the region is good, citing the close proximity to the Interstate system of airports, truck terminals, and railroads to the Interstate system. No other information or analysis is presented on this subject, but the document notes the future role of the Intermodal Management System in monitoring conditions and identifying improvements.

- Connectivity: In the north-south direction, improvements are planned for I-15 to alleviate existing and projected future congestion. According to the Plan, east-west connectivity is good, allowing for the limitations imposed by geography.

- Consistency with Land Use Plans: The Transportation Plans acknowledge that additional work is needed. Comprehensive planning and zoning are almost exclusively the responsibility of local governments. Nearly every jurisdiction has a master plan, but there is little formal coordination among these communities. WFRC has compiled local master plans and combined them into a single, composite map. The local plans also have been examined in terms of their consistency with regional demographic and transportation plans. WFRC perceives a growing public interest in improving coordination among local master

plans and assessing the transportation impacts of rapid growth. WFRC has not analyzed alternative land use scenarios as part of its planning process. WFRC has been exploring computer satellite imagery processing techniques as a substitute for conventional sources of land use inventory data, which are inadequate for regional transportation planning.

- Management Systems: Work plans have been developed for all management systems, which appear to be proceeding according to schedule in most cases.

- Corridor Preservation: The Transportation Plans recommend preserving three corridors for highway improvements, and note that corridors for potential transit improvements need to be determined. UTA has purchased the Union Pacific Railroad right of way for the planned light rail transit line.

- Goods Movement: In response to ISTEA, WFRC has established more direct contact with both the trucking and railroad industries, which have identified few problems related to freight transportation. The trucking industry's primary interest is in supporting proposed highway improvements. The Transportation Plans cite a 1984 study, in which the most severe problems were determined to be associated with regulations and enforcement. Additional issues included congestion, road wear, deteriorating or outmoded terminal facilities, and lack of planning. WFRC plans to collect additional information from the trucking industry, as well as rail, air, and other freight carriers.

- Life Cycle Costs: According to the Transportation Plans, UDOT and local agencies use life-cycle costs in the design of pavement, bridges, and tunnels for specific projects. WFRC has expressed uncertainty concerning the application of life-cycle costing methods to multimodal transportation planning. The perspective presented in the Plans is that life-cycle costing is most useful in the comparison of transit alternatives only.

- Social, Environmental, and Economic Impacts: The Plans include statistics on low income, minority, and disabled populations. Economic benefits are calculated on the basis of lower delay, fuel consumption, operating costs, and accident rates. Potential air quality and wetlands impacts are discussed briefly. The evaluation sections of the Plans conclude that recommended projects and programs do not result in disproportionate adverse impacts to low income, minority, or disabled populations. In an effort to address this factor more explicitly, WFRC has contacted several state and federal regulatory agencies to obtain assistance in evaluating impacts of this nature. The MPO's technical staff will include data on air quality, land use, socioeconomic characteristics, school boundaries, and other related categories of information in a GIS system that is under development.

- Enhancement of Transit Services: Much of the past effort in transit planning has been short-range route planning. The exception has been the more detailed long-range planning performed as part of the I-15 corridor studies. WFRC currently is working

with UDOT on the development of a more detailed transit plan that will identify additional potential transit corridors and appropriate technology.

- Transit Security: While security is not a significant problem in relation to the existing bus system, fixed guideway transit may present enforcement concerns related to planned self-service ticketing.

Observations and Recommendations

1. Integration of Factors: The current versions of the Transportation Plans consider the fifteen factors primarily in the context of an after the fact evaluation. In the time period following the development of the Transportation Plans, however, the factors do appear to have influenced the planning process, as reflected in efforts to improve the evaluation of social, environmental, and economic impacts; provide for corridor preservation; address goods movement issues; and improve long-range transit planning.

2. Goods Movement: A more aggressive approach to freight planning may be required if contacts with industry groups do not yield useful information on goods movement needs and issues. A broader perspective would address systemwide intermodal connections and land use compatibility issues.

3. Land Use: WFRC staff does a good job at reconciling local land use plans through its production of a regional land use map, and should try to obtain policy board endorsement of its land use projections. WFRC also could develop and analyze alternative transportation/land use scenarios, which could be presented in the Transportation Plan. The MPO has demonstrated strong initiative in using computer satellite imagery.

4. Life-Cycle Costing: The MPO does not use life-cycle costing methods that can be applied systemwide.

VI. Integration of Strategic Transportation Planning

UTA is the primary public transit provider in the five counties of the Wasatch Front Region. A thirteen-member Board of Directors appointed by the Salt Lake, Weber, and Davis County Commissions and Utah County Mayors governs UTA. UTA works cooperatively with WFRC, UDOT, DAQ, federal agencies, and the Mountainland Association of Governments (MAG), which is the MPO for the Provo/Orem metropolitan area. A Strategic Plan mission statement sets forth UTA's policies and goals. WFRC prepares the TDP in cooperation with UTA and MAG. UDOT will work with both WFRC and UTA in developing the PTMS.

Until recently, transit planning for the Wasatch Front Region, including the Salt Lake City and Ogden area, focused on short-range bus route planning. The Transportation Plan addresses transit only in terms of broad statements of service expansion objectives and system development priorities. In preparation for future updates of the Plan, WFRC has hired a consultant to conduct a long-range transit planning study, which will define a recommended future system, identify corridors where major capital investment is warranted, and suggest ways to meet intercity transit needs. The long-range planning effort is being conducted by WFRC in cooperation with UTA. The UWP includes an item for developing a transit plan.

The service objectives presented in the Plan involve increasing transit coverage, reducing headways, and improving travel times. Major system development priorities are as follows:

- develop a fixed guideway system in the Union Pacific rail corridor;
- expand the bus system to provide fixed guideway feeder and express bus services;
- expand the vanpool program, targeting major employers;
- develop transit centers;
- construct a new maintenance facility to serve an expanded bus fleet;
- expand paratransit service.

These objectives and priorities establish a direction for future planning efforts, beginning with the current consultant study.

Observations and Recommendations

1. Long-range Transit Planning: The recent MPO and UTA initiatives to improve long-range transit planning are necessary to address strategic transit development needs. The Plan under development should be integrated with the officially adopted Transportation Plans for Salt Lake and Ogden.

VII. Travel Demand Forecasting

Two positive features characterize WFRC's modeling effort: (1) communications with local communities, (2) the technical staff's depth of experience. The MPO's demographic projections have proved to be sound, as reflected in the validation of past population estimates. The technical staff includes several people who have been in the agency for over ten years, who know the data, the models, and their community.

One aspect of the modeling process that WFRC could reconsider is the current practice of using separate models for Salt Lake and Ogden. The number of trips between these two areas is increasing dramatically, as is the region's population. Merging the two models is desirable to improve areawide sensitivity to changes in conditions that affect travel behavior. This will require some effort to improve the models, integrate the networks, and implement related technical adjustments, but the effort will become increasingly difficult as the area's population continues to grow.

The WFRC models are traditional, of vintage 1975. Trip generation, trip distribution, mode split, and traffic assignment are performed sequentially for 500-plus zones in Salt Lake and 200-plus zones in Ogden. The software package used is MINUTP, which is executed on personal computers. The staff finds this environment to be more convenient than using mainframes.

A description of the four-step modeling process as applied by WFRC is as follows:

- Trip generation is determined using regression models to forecast person trips by six trip purposes, including commercial trips and home-based college trips. As a near-term improvement, WFRC intends to build a stratified trip generation model by auto-ownership and household size for each of eight trip purposes, using results from a 2100-household survey conducted in 1993.

- Trip distribution is with a multi-purpose gravity model using free-flow travel times and no k-factors.

- Current transit trips (about 22 thousand trips/day) represent fewer than 4 percent of the total, and 20 percent of that is by college students. WFRC's model review reports suggest that their mode split models reasonably replicated current behavior. The mode choice model is logit. For Salt Lake non-work trips, the MPO uses a nested logit model. The model first splits into transit versus auto. Transit splits into drive versus walk (which is further separated into "local" versus "premium.") Auto splits into drive-alone, 2-person car pools, and 3+ car pools. For Salt Lake's work trips and all of Ogden's trips (where transit usage is minimal), a single-level model is used that splits person trips into transit, drive alone, and 2 and 3+ person car pools.

- The mode split modeling is done by a consultant, and the WFRC staff indicated that

transit networks are coded using UTPS/UPATH.

- The traffic assignment model does a few iterations of equilibration, using a 24-hour trip table. Peak link volumes are estimated using a fixed percentage of the 24-hour volumes, which is consistent with typical practice, although not highly sophisticated.

Emissions are estimated by inputting VMT, average speed, and total peak and off-peak volumes into the MOBILE model. It is likely that the MPO's input data are more accurate than MOBILE's output.

Observations and Recommendations

1. General: The MPO's transportation modeling is consistent with the state of the practice for MPOs of comparable size. The technical staff is knowledgeable and has successfully identified potential improvements. Continuation of efforts such as this and the recent home interview survey are necessary to maintain modeling capabilities at a high technical standard. Overall, the staff should strive to keep pace with progress in the discipline of travel behavior modelling.

2. Combine Models: The MPO should consider developing a single unified model for the entire Salt Lake and Ogden metropolitan area, which would simplify and improve the analysis of areawide impacts.

3. Performance Indicators: The development of performance indicators based on modeling results, such as a congestion index, would be useful for application in the analysis of project alternatives and in benefit/cost studies.

VIII. Meetings with Representatives of the General Public and Local Elected Officials

A. General Public

The EPR site visit included a meeting of the federal team with representatives of the general public, who were invited by WFRC. WFRC had sent a notice concerning the meeting to individuals on its public review list for the TIP, which includes thirteen names. Four people attended the meeting, one of whom was not on the mailing list. Those in attendance were activists, three of whom were affiliated with environmental or community groups, and one who had a long history of involvement in the local transportation planning process. Their comments are summarized below.

- Land use information provided by the local governments to WFRC is weak. Federal funding for the collection of inventory data was discontinued in the 1980s, and as a result, the land use information generated by local governments has an inadequate basis in field surveillance.

- Public attitudes toward growth management and land use planning are becoming more positive. Six thousand new members from the Salt Lake area joined the Sierra Club last summer. The press also has shown increased interest in planning issues.

- There has been little opportunity for environmental or community groups to become involved in the planning process. It is only recently that local environmental groups have organized around transportation issues. Citizens care about the issues but do not know how to participate in the planning process. The general public also has no knowledge of ISTEA.

- Better information and training are needed if the general public is to participate successfully in the planning process. Suggested ideas for educating citizens include the use of electronic bulletin boards and sponsorship or co-sponsorship of conferences and open houses. ISTEA workshops also would be helpful.

- The education and involvement of grassroots organizations is critical, because the tenure of public officeholders is brief.

B. Local Elected Officials

The federal team had a single meeting with four of the Mayors of municipalities in the metropolitan area: West Jordan, Murray, South Jordan, and Sandy. These mayors also are members of the WFRC policy board. Immediately prior to the meeting, the team talked briefly with the Mayor of Salt Lake City, who could not stay for the group meeting. The team also met

separately with the Mayor of Ogden, who was not available for the meeting held with the other mayors. The following is a summary of the mayors' comments.

- The mayors noted that there is intense interest in transportation issues among people who live and work in the region. One mayor said that the issues raised most frequently by his constituents concern transportation. The mayors support an increased emphasis on the linkages between land use and transportation as part of the planning process.

- Several of the mayors were critical of long-range transit planning. One of the mayors expressed dissatisfaction with transit service reliability and coverage. Most of the mayors were supportive of the planned light rail transit (LRT) line, but criticized the planning process, on the grounds that the project was planned and presented in a vacuum, lacking the context of a broader long-range plan. It was said, for example, that the project would be perceived as benefitting a wider geographic area and a greater number of area residents if plans for the rail line included a feeder bus network. The mayors agreed that a comprehensive long-range plan, covering both transit and highways, would serve as a valuable tool for educating the public.

- While some of the mayors cited communications by all of the metropolitan transportation agencies-- WFRC,UTA, and UDOT-- as being problematic, and at times a hindrance to moving federal projects forward, several mayors said that this is improving, and that the planning process is working well overall. They perceive the distribution of federal funds as being fair, but noted some questions about political priorities at the state level.

- One of the mayors said that public meetings should be focused on existing organizations, e.g. Chambers of Commerce, community groups, service organizations. Some mayors emphasized that WFRC should work with and through public officials in their efforts to reach the public.

- One mayor criticized the federal requirements associated with transportation enhancements as being onerous. In the case of a bicycle trail project, the need to conform with federal highway design standards drove up costs and resulted in excessive delays.

- The mayors expressed concern about the congestion that would occur during the reconstruction of I-15. One mayor cited the need for improvement of parallel facilities to relieve construction-related impacts on the interstate facilities.

Conclusion

The transportation planning process in Salt Lake and Ogden addresses the need to maintain existing and future metropolitan area mobility. WFRC's committee structure provides for a high degree of coordination among the MPO and its partner agencies, which has resulted in the establishment of cooperative and collaborative approaches to most aspects of the planning process. WFRC produces a clear and informative TIP. There also has been progress in responding to the challenges of ISTEA, as exemplified in the financial analysis conducted in support of the Transportation Plan and TIP, preliminary efforts to incorporate MIS in the planning process, and initiation of long-range transit planning. Potential areas of improvement include increasing the emphasis on multimodalism, which extends to bicycle and pedestrian planning, developing and integrating transit improvements in the Transportation Plan beyond short-term improvements, and integrating transportation planning within a broader vision encompassing land use, environmental, and social goals. There is evidence of increasing public interest in metropolitan area planning issues, which warrants development of a more proactive approach to public involvement.

Appendix A
Wasatch Front Regional Council
Membership and Voting

Mayor, West Jordan
Mayor, Washington Terrace
Commissioner, Weber County
Commissioners (2), Salt Lake County
Mayor, Salt Lake City
Mayor, Bountiful
Weber Area Council of Governments
Commissioner, Tooele County
Mayor, South Jordan
Mayor, Clinton
Mayor, Roy
Commissioner, Davis County
Mayor, Murray
Commissioner, Morgan County
Mayor, West Valley City

Appendix B
Local Participants in the
Salt Lake and Ogden, Utah Enhanced Planning Review

Wasatch Front Regional Council
Policy Board:
Tom Doland, Mayor of Sandy
T.B.Hutchings, Mayor of South Jordan City
Lynn Piett, Mayor of Murray City
Max Hogan, Mayor of West Jordan City
Staff:
Will Jefferies, Executive Director
Mick Crandall, Program Director
Matthew Riffkin
Douglas Hattery
Jon Nepstad
George Ramjoue
Wayne Bennion
Greg Scott
Tim Boshert

Utah Department of Transportation
Elden Bingham
Lowell Elmer
Gary Kuhl
Bob Parry
Richard Manser

Utah Transit Authority
Jerri Ashurst, Programs Administrator
Randy Park
Richard Hodges

Utah Division of Air Quality
Barbara Cole, Manager
Dave McNeill, Manager SIP Development
Steve Arbaugh
Rachael Parkhurst-Miller
Betsey Baker

US Environmental Protection Agency
Audrey C. Wilkins

Appendix B (continued)

General Public
Nina Dougherty, Sierra Club and Wasatch Clean Air Coalition
Rawlins Young, Sugar House Community Council
Hermoine Jey, Capitol Hill Community Group
Roger Borgenicht

Appendix C

AGENDA

FHWA/FTA Enhanced Planning Review of the Salt Lake and Ogden, Utah Metropolitan Area
February 27 - March 3, 1995

Monday, February 27, 1995

1:00 - 5:00 Federal Team Meeting

Tuesday, February 28, 1995

9:00 - 9:30 Introductions and Overview of the Enhanced Planning Review

Jim Biddiscombe, FHWA Utah Division
Melissa Laube, US DOT/Volpe Center

Federal Team
- FHWA/FTA Regional Staff
- FHWA Division Staff
- FHWA/FTA Headquarters Staff
- Federal Railroad Administration
- US DOT/Volpe Center Staff
- US EPA

Local Participants
- Wasatch Front Regional Council
- Utah Department of Transportation
- Utah Transit Authority
- Utah Division of Air Quality
- US Environmental Protection Agencies
- Municipalities

9:30 - 10:00 Organization of the Planning Process, Agreements, Products of the Planning Process, Self-Certification

Federal Team Discussion Leader:
Jim Biddiscombe, FHWA Utah Division
Local Participants: Status/Update/Discussion

9:30 - 11:30 Break-out Session: Review of Technical Methods, Travel Demand Modeling

Federal Team Discussion Leader:
Bob Dial, US DOT/Volpe Center

10:00 - 11:30 ISTEA Fifteen Factors

Federal Team Discussion Leader:
Jim Biddiscombe, FHWA Utah Division

Local Participants: Status/Update/Discussion

12:30 - 2:00 Demographic Issues, Data Collection, Trends

Federal Team Discussion Leader:
Melissa Laube, US DOT/Volpe Center

Local Participants: Status/Update/Discussion

2:30 - 4:30 Technical Modeling Process, Travel Demand Forecasting:
Summary of Morning Session

Federal Team Discussion Leader:
Bob Dial, US DOT/Volpe Center

Wednesday, March 1, 1995

9:00 - 10:45 Air Quality Planning

Federal Team Discussion Leader:
Robin Smith, FHWA Region 8

Local Participants: Status/Update/Discussion

10:45 - 11:45 Major Investment Studies

Federal Team Discussion Leader:
Paul Verchinski, FTA Headquarters

12:45 - 2:15 Congestion Management and Other Management Systems

Federal Team Discussion Leader:
Paul Verchinski, FTA Headquarters
Local Participants: Status/Update/Discussion

2:15 - 3:15 Intermodal Planning - Transit, Bicycles, Pedestrians, Freight

Federal Team Discussion Leader:
Don Cover, FTA Region VIII

Local Participants: Status/Update/Discussion

4:00 Meet with Ogden Area Local Officials

Federal Team Discussion Leader:
Paul Verchinski, FTA Headquarters

Local Participants: Status/Update/Discussion

Thursday, March 2, 1995

9:00 - 10:15 Intermodal Planning - Transit, Bicycles, Pedestrians, Freight (cont.)

Federal Team Discussion Leader:
Don Cover, FTA Region VIII

Local Participants: Status/Update/Discussion

10:15 - 11:45 Financial Planning and Financial Constraint

Federal Team Discussion Leader:
Robin Smith, Region 8

Local Participants: Status/Update/Discussion

Appendix C (continued)

1:00 - 2:30	Public Involvement Process
	Federal Team Discussion Leader: Paul Verchinski, FTA Headquarters
	Local Participants: Status/Update/Discussion
4:00	Meeting with Salt Lake Area Local Officials
	Federal Team Discussion Leader: Jim Biddiscombe, FHWA Utah Division
5:30 - 7:00	Meet with the Public

Friday, March 3, 1995

9:00	Presentation of Preliminary Findings

Appendix D
List of Documents Reviewed

Draft Contract Between Wasatch Front Regional Council and Utah State Department of Transportation, 1995 (unsigned)

Utah Department of Transportation, State of Utah Congestion Management System Development, Implementation and Operation Work Plan, December 1994.

Utah Department of Transportation, Utah Safety Management System Work Plan, Utah Department of Transportation, August 1994.

Utah State Implementation Plan, Section IX, Control Measures for Area and Point Sources.

Wasatch Front Regional Council (WFRC), Certification Determination, Salt Lake/Ogden Urban Transportation Planning Process, August 1994.

WFRC, Utah Department of Transportation, and Utah Transit Authority, Memorandum of Agreement, April 8, 1988.

WFRC, Memorandum, Proposed Public Comment and Review Procedures for the 1995-99 Transportation Improvement Program and Long Range Transportation Plan, May 12, 1994.

WFRC, Memorandum, Salt Lake and Ogden Long Range Plans' Financial Plan, WFRC, October 31, 1994.

WFRC, Ogden Area Transportation Plan, Technical Report 31, September 1993.

WFRC, Regional Planning Projections, Technical Report No.29.

WFRC, Salt Lake Area Transportation Plan, Technical Report 30, September 1993.

WFRC, Transportation Improvement Program 1995-1999, December 1994.

WFRC, Unified Work Program, 1995 Program Year, May 1994.

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