

OVERVIEW

2030 REGIONAL TRANSPORTATION PLAN

1.1

Created in 1969, the Wasatch Front Regional Council (WFRC) has been responsible for transportation planning in the Salt Lake and Ogden - Layton Urbanized Areas since 1973. During that year Utah Governor Calvin L. Rampton designated the WFRC as a Metropolitan Planning Organization (MPO) responsible for developing area-wide long range transportation plans for Salt Lake, Davis, and Weber Counties. This document, entitled the *Wasatch Front Regional Transportation Plan: 2007-2030* (2030 RTP), reflects a continuous effort by the Regional Council to identify, plan, finance, and implement a coordinated system of transportation improvements to serve existing and expected growth throughout the region between now and the year 2030.



The 2030 RTP was developed in close cooperation with representatives from the Utah Department of Transportation (UDOT), the Utah Transit Authority (UTA), the Utah Division of Air Quality (DAQ), and the cities and counties throughout the region. The 2030 RTP meets federal government requirements (under Title 23, Part 450 and Title 49, Parts 100 to 300 of the Code for Federal Regulations) for metropolitan areas with a population of 50,000 or greater to adopt a long-range transportation plan with a minimum planning horizon of

twenty years. The planning policies and recommendations of the 2030 RTP are prepared under the guidelines of the Safe, Accountable, Flexible, Efficient, Transportation Equity Act: A Legacy for Users (SAFETEA-LU), adopted by Congress on August 10, 2005. This document, Technical Report 46, details the 2030 RTP planning process, lists new recommended capital improvement projects, provides for upgrades to the existing transportation facilities, and identifies both potential impacts and benefits of the 2030 RTP. This technical report supercedes its predecessor, entitled the *Wasatch Front Urban Area Long Range Transportation Plan Update: 2004-2030*.

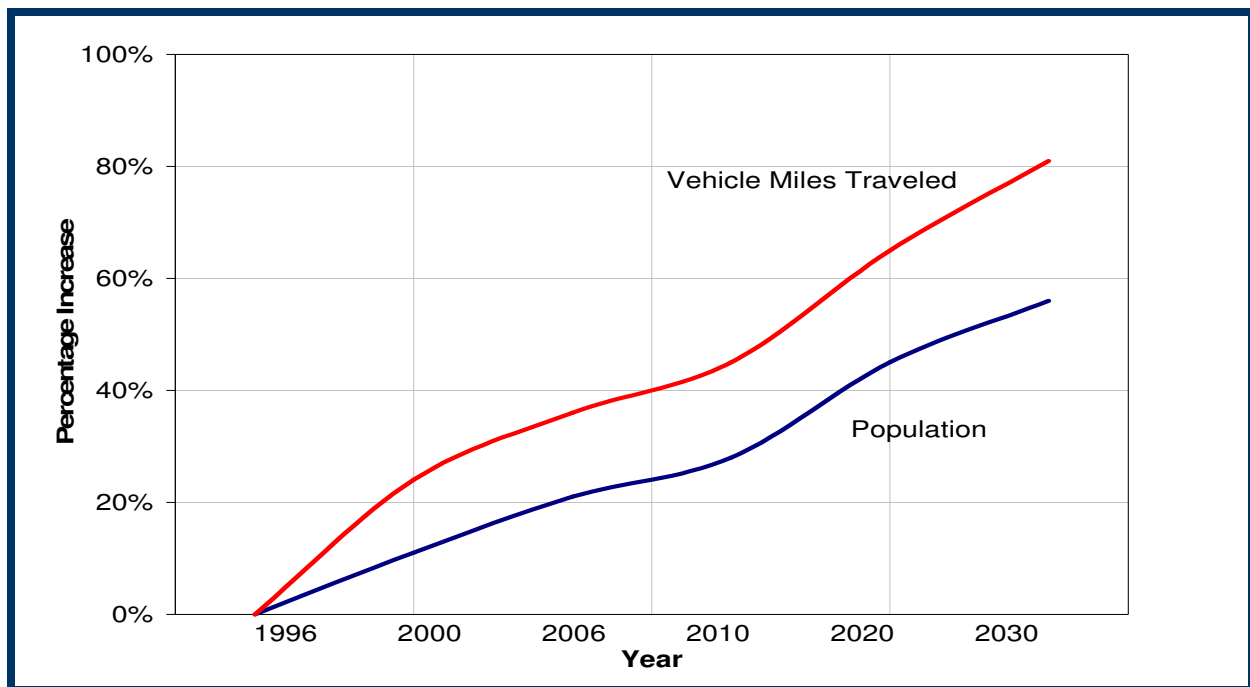
Population along the Wasatch Front is projected to increase 42 percent, or be 1.4 times the current population, between now and 2030. If no more transit lines or highways are constructed, the average per capita delay resulting from traffic congestion will increase by 360 percent, or be 4.6 times the current delay. These regional statistics point to the gravity of the transportation challenge facing the region that will require innovative solutions on a corridor-by-corridor basis.

The Wasatch Front's anticipated growth will require significant investment in new transportation capacity. To meet this demand, the 2030 RTP includes approximately 1,070 lane-miles of new capacity improvements to the existing highway system. The 2030 RTP also recommends approximately 240 miles of major public transit improvements. These improvements include 31

additional miles of light rail transit, 22 miles of commuter rail transit, 96 miles of bus rapid transit, 88 miles of enhanced bus service, and 3 miles of streetcar. These miles of major transit improvements translate into an increase of over 40,000 revenue miles of transit service each weekday, or a 540 percent increase. The 2030 RTP recommends that the number of bus route miles throughout the Wasatch Front Region be increased by at least 25 percent over the next 23 years.

Vehicle miles of travel (VMT) and transit passenger miles of travel are measures of how much travel occurs on the transportation system. Vehicle miles traveled is anticipated to increase 52 percent, or to be 1.5 times the current number of miles traveled. This projection reflects a decrease in growth rate compared to historical trends. The total number of transit passenger miles of travel is expected to increase 232 percent, or approximately 3.3 times the current passenger miles traveled. Figure 1-1 illustrates the trend in population and vehicle mile traveled between 1996 and 2030.

FIGURE 1-1
WASATCH FRONT GROWTH IN POPULATION AND VEHICLE MILES TRAVELED



The 2030 RTP was developed within the constraints of reasonable financial assumptions. The list of specific highway and transit facility improvements contain only those projects that can be funded over the next 23 years, or between the years 2007 and 2030. Reasonable assumptions were made concerning both future revenues for transportation improvements and the estimated costs of recommended highway and transit facilities.

Finally, to coincide with anticipated financing and revenue streams, the implementation of the 2030 RTP was divided into three separate phases: Phase 1 (2007-2015); Phase 2 (2016-2025); and Phase 3 (2026-2030). The Financial Plan for the *Wasatch Front Regional Transportation Plan: 2007-2030*, Technical Report 47, documents the estimated revenues and costs of highway and transit improvements through the year 2030. A separate appendices document supports the planning process, public involvement, and recommendations of the 2030 RTP.



SUMMARY OF PAST PLANNING EFFORTS

The first comprehensive, regional transportation planning efforts in the Wasatch Front Urban Area were undertaken in the early 1960's. At that time, the Utah Department of Transportation worked with local elected officials in the Wasatch Front Region to develop an area-wide Long Range Transportation Plan (LRP) for 1980. As part of this study and analysis, an origin-destination survey for this region was conducted to develop travel-forecasting models for projecting future traffic flows.

In the mid-1970's, a major update to the Wasatch Front Region's LRP was undertaken by the WFRC. The objective was to extend the LRP to the planning horizon of 1995, taking into account the changes in development patterns and travel behavior that had occurred since the first LRP was adopted. The 1979 LRP, with a planning horizon out to 1995, consisted of Technical Report 13 for the Salt Lake Urbanized Area and Technical Report 19 for the Ogden Urbanized Area. This LRP was approved, published, and distributed in September 1979.

In the 1980's, a second major update to the Wasatch Front Region's LRP was undertaken by the WFRC. This update effort extended the LRP's time horizon to 2005. While earlier long range transportation plans had developed a good master plan for future transportation facilities with an emphasis on highways, many of the facilities would not be needed during the time frame of the plan and funding for other projects was unlikely to be available. The LRP developed in 1987 took a slightly different approach and made recommendations to address the projected needs for the year 2005. The WFRC also developed a separate plan for facilities needed beyond 2005 as a guide for local communities to use in future local transportation planning. The 2005 LRP was approved by the Wasatch Regional Council in 1987, and consists of Technical Report 22 for the Salt Lake Urbanized Area and Technical Report 23 for the Ogden Urbanized Area.

Beginning with the passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991, all regional transportation plans are now required to include a financial element showing how the recommended projects and facilities can reasonably be implemented. This financial constraint meant that some needed projects could not be included in LRP recommendations. In 1993, the WFRC adopted an interim long-range transportation plan to address the financial requirements and other criteria established by ISTEA. The Wasatch Regional Council approved a final long range transportation plan in 1995. This LRP, which had a planning horizon out to the year 2015, addressed ISTEA requirements. Three reports were published, including Technical Report 32, *The Salt Lake Area Long Range Plan*, Technical Report 33, *The Ogden Area Long Range Plan*, and Technical Report 34, *The Financial Plan for the Wasatch Front Region Transportation Plans*.

A comprehensive LRP for 2020 was developed and approved by the Wasatch Front Regional Council in October 1998 for the Salt Lake and Ogden Urbanized Areas. This LRP effort placed greater emphasis on public transit improvements than previous long range transportation plans, and identified a system of fixed guideway light rail and regional commuter rail facilities. The Long Range Transportation Plan was documented and summarized in a series of technical reports, including Technical Reports 35, 36, 37, and 38.

The Long Range Transportation Plan was revisited beginning in January 1999. The Salt Lake and Ogden Urbanized Areas, treated in the past as two separate and distinct geographic jurisdictions for population projections, travel demand analysis, needs assessment, recommended transportation projects, and supporting documentation, were combined into the larger, more complete Wasatch Front Urban Area for the purposes of this particular planning effort. The LRP and supporting documentation, entitled the *Wasatch Front Urban Area Long Range Transportation Plan: 2002-2030*, was approved and adopted by the WFRC in December 2001. The 2002-2030 LRP was designated



Technical Report 40. Technical Report 41, entitled the *Wasatch Front Urban Area Long Range Transportation Plan: 2002-2030 Financial Plan*, along with appendices and executive summary, provided supporting documentation to the 2002-2030 LRP. In the 2000 United States Census, the Ogden Urbanized Area became the Ogden - Layton Urbanized Area, which incorporated a portion of Davis County that was formerly included in the Salt Lake Urbanized Area.

Finally, in December 2003, Regional Council representatives adopted the *Wasatch Front Urban Area Long Range Transportation Plan Update: 2004-2030*, Technical Report 43, along with its accompanying *Financial Plan*, Technical Report 44. These previous regional transportation planning efforts provided the groundwork for the current 2030 RTP, which builds on the recommendations and priorities established in earlier long range plans.

1.3

OVERVIEW OF THE 2030 RTP

Purpose For The 2030 RTP

Federal regulations governing the development of transportation plans and programs in urbanized areas require MPO's to update their regional transportation plans every four years. The Wasatch Front's Regional Transportation Plan: 2007-2030 takes advantage of the latest socioeconomic growth forecasts, projected increases in travel demand for the region, and changes in the priority of various planned transportation improvement facilities. Periodic updates to the Wasatch Front's RTP allow for new information to be incorporated and recommended additions to the list of highway and transit projects to be made. The 2030 RTP specifies a coordinated system of highways, freeways, arterial streets, transit facilities, transit hubs, intermodal centers, park-and-ride lots, airport facility improvements, freight movement corridors, pedestrian paths, and bicycle routes. A 23-year planning horizon was selected for this latest effort and the 2030 RTP covers the planning period from the year 2007 until 2030.

Review Of Planning Process

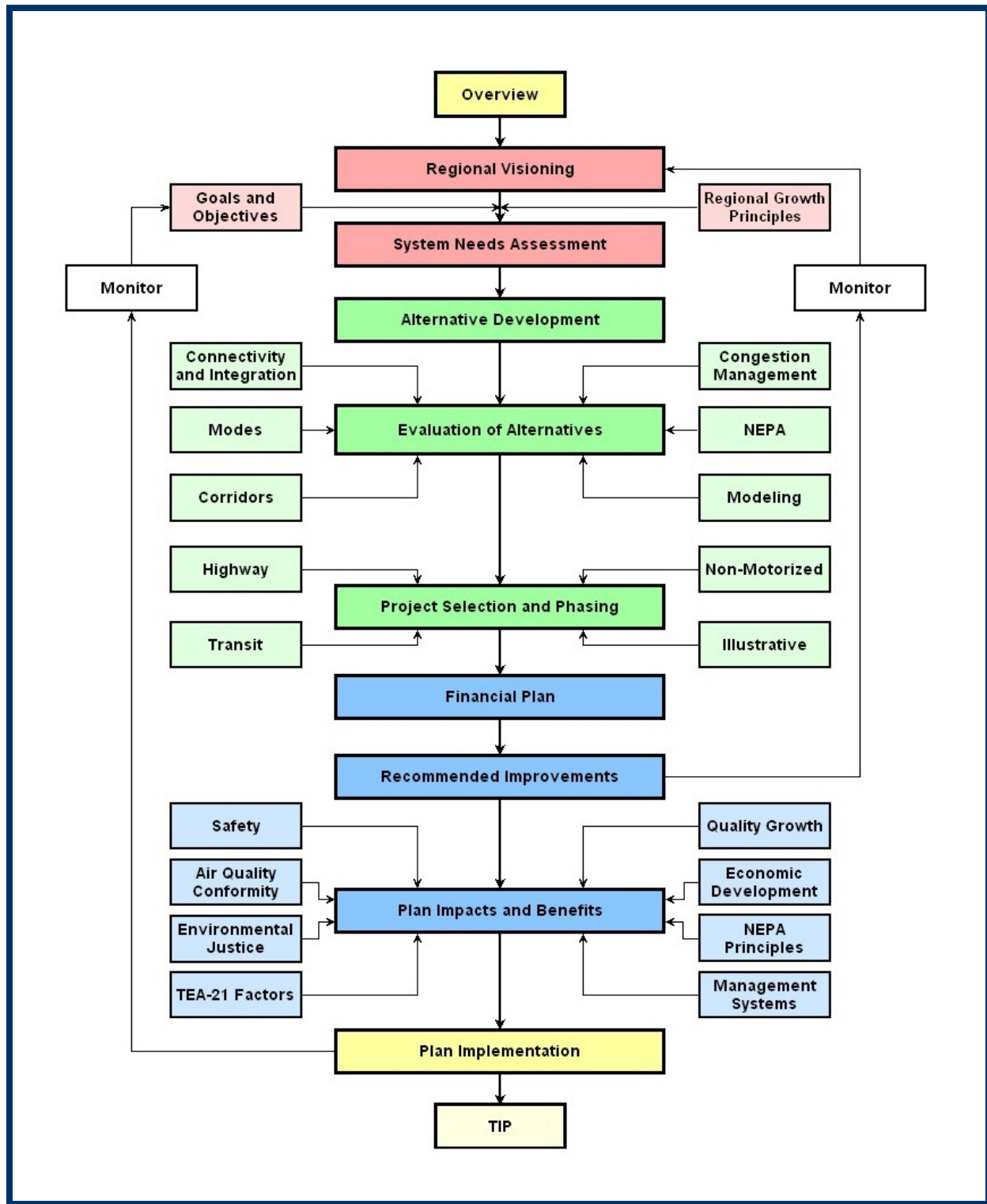
The Wasatch Front Regional Council utilized a 10-step planning process to guide the preparation of the 2030 RTP. This model calls for (1) Overview or Problem Identification, (2) Visioning, (3) Needs Assessment, (4) System Alternatives Development, (5) Evaluation of System Alternatives, (6) Project Selection and Phasing, (7) Financial Plan, (8) Recommended Improvements, (9) Plan Impacts and Benefits, and (10) Plan Implementation. This simple but effective model not only provides a straightforward approach to the complex task of planning for regional transportation growth and demand, but is also used as the format and chapter headings of this report. The planning steps in the 2030 RTP are detailed in Figure 1-2.

The 2030 RTP planning process started with a series of meetings with planners and engineers from UDOT and UTA, who helped identify areas of concern and suggestions for specific transportation improvement projects. The information provided by these professionals was compiled and analyzed. Additional meetings were scheduled with local elected officials and stakeholders. An extensive public outreach and visioning exercise was conducted with the help of planners at Envision Utah, which resulted in an adopted list of regional growth principles and a "preferred land use and transportation network" for the Wasatch Front. Three transportation scenarios eventually led to the development and refinement of three transportation system alternatives designed to meet regional needs. A quantifiable comparison of projects helped determine which performed the best. An on-going effort to solicit public input helped guide the 2030 RTP effort. Finally, a quantifiable means of identifying highway and transit projects that best met regional needs was developed and tested. Once specific capacity improvement projects were identified, they were placed into one of three construction and funding phases according to their overall evaluation.



FIGURE 1-2

2030 RTP PLANNING PROCESS



Socioeconomic Projections

Utilizing population information received from the Governor's Office of Planning and Budget (GOPB), and the "UrbanSim" program as an analytical tool, the WFRC generated population and employment projections for approximately 800 traffic zones throughout the Wasatch Front Region. These projections distributed population and employment on the basis of such factors as the Regional Growth Principles adopted by the Regional Council to guide regional planning efforts. These socioeconomic projections were reviewed by community planners, engineers, and locally elected officials, allowing for adjustments to be made to this important component of the 2030 RTP. Population projections indicate that the Wasatch Front region will increase over the next 23 years from 1,334,000 persons to approximately 2,139,000 persons.

Highway And Transit Needs Analysis

Regional traffic modeling, utilizing projected 2030 population, employment, and transportation mode choice information, was performed and analyzed. Projected traffic volume and highway capacity ratios were mapped, allowing the WFRC to locate areas of potential concern. Information was also gathered on the Wasatch Region's pedestrian safety and vehicle accident rates. Additional needs analysis steps included an inventory of UTA bus and light rail service areas and operational frequency, transit park-and-ride locations, and other facilities.

Strategy Development

A regional land use inventory and environmental database were generated for the 2030 RTP. These data assisted in the preparation and analysis of alternative transportation solutions. Three alternative transportation alternatives were developed and evaluated. Each alternative was based on a different combination of highway and transit projects. The three transportation alternatives were examined by local planners and engineers, UDOT, UTA, elected officials, the 2030 RTP Stakeholders Group, and the general public.

1.4

GOALS AND OBJECTIVES

Several basic goals and objectives were established to guide the 2030 RTP. A synthesis of the regional growth principles (see Chapter 2) and an analysis of the region's transportation needs (see Chapter 3) confirms the following transportation goals and objectives.

- I. Goal** Provide a balanced, inter-connected transportation system with a range of convenient, efficient, and economical choices.
- II. Goal** Increase transportation mobility and accessibility for both persons and freight, thus promoting economic vitality in the region.
- III. Goal** Increase transportation safety and security for all modes of travel.
- IV. Goal** Provide a transportation system that both protects and enhances the environment, promotes energy conservation, and improves the quality of life.
- V. Goal** Protect existing and future transportation systems through ongoing maintenance, preservation, or reconstruction.

In order to further these goals, more specific objectives were developed.

- Maintain LOS E (v/c 1.0) or better in all major corridors.
- Manage all major corridors to optimize throughput using congestion pricing and Intelligent Transportation System (ITS) measures.
- Reduce the rate of growth in regional VMT to the rate of growth in population.



- Maintain regional vehicle hours of delay through the planning horizon for the RTP at the present level as inflated by population growth rate.
- Manage access to major facilities to maintain throughput, encourage compatible land uses, and promote economic development.
- Preserve corridors early.

SAFETEA-LU

The federal regulations, known as the Safe, Accountable, Flexible, Efficient Transportation Equity Act - A Legacy for Users (SAFETEA-LU) was passed by the United States Congress on August 10, 2005. SAFETEA-LU identified eight planning factors that need to be considered and addressed in regional transportation planning. The eight SAFETEA-LU planning factors are listed below and the manner in which the 2030 RTP addresses each factor can be found in Section 9.7 of this document.

1. Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency.
2. Increase the safety and security of the transportation system for motorized and non-motorized users.
3. Increase security of the transportation system for motorized and non-motorized users.
4. Increase the accessibility and mobility of people and freight.
5. Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and state and local planned growth and economic development patterns.
6. Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.
7. Promote efficient system management and operations.
8. Emphasize the preservation of the existing transportation system.

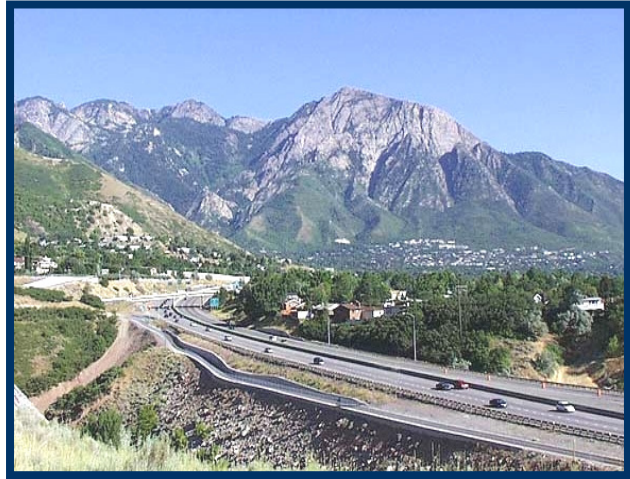
Goals For The RTP Process

When work began on the latest update of the RTP, goals for the update process were formulated by the WFRC staff. These goals were presented to the Regional Council for their review and approval. On April 29, 2004, the Regional Council approved these goals, which have since served as the parameters for the development and preparation of the 2030 RTP. The goals are listed below.

1. Adopt growth principles and strategies that can serve as guidelines to local governments.
2. Develop a "Vision" of what our region could become in the next 30, 40, or more years relative to land use and transportation, and their impacts on the quality of life and economic development.
3. Identify scenarios of alternative futures, or growth choices for the Regional Transportation Plan on which policy decisions regarding transportation can be based.
4. Develop an enhanced public outreach and involvement process for the regional "Vision" and Transportation Plan that involves innovative techniques and collaboration.



5. Develop an enhanced Geographic Information System (GIS) database and analysis capabilities consistent with the National Environmental Policy Act (NEPA), travel demand modeling and enhanced public outreach and involvement requirements.
6. Incorporate NEPA and other criteria and analyses into the transportation planning process, such as project purpose and need; safety and security; economic development; land use; alternatives analysis; and core system performance measures.
7. Strive for consistency between the Regional Transportation Plan and local general plan policies and provisions.
8. Enhance the regional planning process with new technical planning tools, such as UrbanSim; and foster collaboration between MPO organizations, especially when such organizations have contiguous boundaries.
9. Evaluate and update the criteria for selection of projects and for determining project priorities for the Regional Transportation Plan.



Essentially, all of the goals noted above have been achieved with the development and management of the regional transportation plan planning process. In collaboration with Envision Utah, the four-county area encompassing the urbanized portions of Weber, Davis, Salt Lake, and Utah Counties, was addressed in the extensive 18-month visioning process is documented in the Wasatch Choices 2040 Report. The process resulted in the development of growth principles as well as a “vision” for the region. In addition, multiple growth scenarios were evaluated in establishing the “vision” (Goals 1, 2, and 3). An enhanced public involvement process was approved by the Regional Council in 2006. A complete redesign of the WFRC’s website was also accomplished, making it easier for the public to obtain information and to communicate with staff members (Goal 4).

The WFRC’s GIS has improved through the addition of several environmental layers, greater map-making capabilities, and acquisition of more up-to-date aerial photography and satellite imagery (Goal 5). All of the significant regional projects have been evaluated relative to their goals and objectives (purpose and need), safety, security, economic development, and land use (Goal 6). Striving for consistency between the transportation plan and local General Plans, is an on-going process. However, as the 2030 RTP was developed, “buy-in” from essentially all of the local governments officials by the Plan was obtained (Goal 7). Relative to new technical tools, the UrbanSim Model was used in evaluating and disseminating projected population, employment, land use, and other socio-economic data to small geographic areas (traffic zones) and cities (Goal 8). And lastly, an evaluation system was developed and applied to the planning process to help determine projects and priorities for the 2030 RTP (Goal 9).

Many of the goals and objectives that have been used in past LRP’s, such as those found in TEA-21, are similar and share common themes. These, in effect, have formed a basis for past plans as well as for the most recent effort in preparing the 2030 RTP. The above goals and objectives represent the Region’s transportation values and will continue to play a role in future plans.



PLANNING ORGANIZATIONS AND COMMITTEES

The development of the 2030 RTP required the involvement, cooperation and coordination of various federal, state, local, and public organizations and committees. The WFRC worked closely with a number of agencies and organizations to ensure that the 2030 RTP serves the needs and values of the region for which it is developed. The 2030 RTP planning process utilized input and recommendations from the following groups.

Federal Agencies

- Federal Highway Administration (FHWA)
- Federal Transit Administration (FTA)
- Federal Aviation Administration (FAA)
- U.S. Environmental Protection Agency (EPA)
- U.S. Fish & Wildlife Service
- U.S. Forest Service

State Agencies and Organizations

- Utah Department of Transportation (UDOT)
- Utah Division of Air Quality (DAQ)
- Utah Division of Parks & Recreation
- Utah State Lands and Forestry
- Utah Solid & Hazardous Waste
- Governor's Office of Economic Development

Local Governments

- Wasatch Front Regional Council (WFRC)
- Transportation Coordination Committee (TransCom)
- Utah Transit Authority (UTA)
- Salt Lake County Council of Governments
- Davis County Council of Governments
- Weber Area Council of Governments
- Salt Lake Area Transportation Technical Advisory Committees
- Ogden - Layton Area Transportation Technical Advisory Committees
- City and County Planners and Engineers
- Local School and Water Districts

General Public

- Envision Utah
- Public Open Houses
- Outreach interviews with select special interest and environmental justice groups

In addition to the above organizations, the WFRC held two meetings for various federal, state, local, and private resource agencies providing early participation and input into the 2030 RTP. Participating organizations included the U.S. Army Corps of Engineers, Utah Department of Natural Resources, Utah Department of Agriculture and Food, Utah Geological Survey, Utah Open Lands, Utah Division of State History, Utah Division of Water Resources, Utah Division of Water Quality, Jordan Valley Water Conservancy District, Utah Wildlife Resources, Utah Heritage Foundation, State Historic Preservation Office, and various school districts located within the study area. Thus, these organizations were able to be part the 2030 RTP process, analysis, and solution development. These resource agency groups provided early identification of key concerns, mitigation strategies, and solution development, including the type and scope of needed transportation projects.



Finally, the WFRC was assisted in developing the 2030 RTP by two groups of Technical Advisory Committees (TAC), whose membership is made-up of the Wasatch Front Region's city and county planners and engineers. The Wasatch Front's Regional Growth Committee (RGC) and the Transportation Coordination Committee (Trans Com), each with its respective TACs were also key participants in the RTP process. Monthly input from the TACs helped to guide the 2030 RTP planning process and identify various issues and concerns.

1.6

FEDERAL PLANNING REGULATIONS

As nationwide transportation plans are developed, there are eight SAFETEA-LU factors that need to be considered in the planning process. The Unified Planning Work Program (UPWP), developed by the WFRC in cooperation with UDOT and UTA, specifies the various work tasks to be accomplished in the region's transportation planning process. The UPWP incorporates and complies with all eight of the SAFETEA-LU planning factors.

2006 Planning Emphasis Areas

In addition to the eight factors related to the SAFETEA-LU requirements, the FHWA and FTA have identified six Planning Emphasis Areas for 2006 and 2007. The mission of these Planning Emphasis Areas is to ensure the highest quality of surface and public transportation and to promote the nation's economic and community vitality. The Planning Emphasis Areas are as follows.

- Consideration of safety and security in the transportation planning process
- Linking of the planning and NEPA processes
- Consideration of management and operations within the planning process
- Consultation with non-metropolitan local officials (State DOT)
- Enhancing of the technical capacity of the planning processes
- Coordination of human service transportation

Planning Provisions

The federal transportation planning regulations derived from the SAFETEA-LU legislation revise metropolitan and statewide statutory requirements. The 2030 RTP complies with all of SAFETEA-LU's planning provisions. The planning provision changes, as published by the United States Department of Transportation, FHWA, FTA, and by a memorandum dated September 2, 2005 with the subject are summarized as Appendix D.

Air Quality Provisions

Section 6011 of SAFETEA-LU, which deals with transportation air quality conformity, makes several changes to the transportation conformity process. These changes are listed as follows.

- a 12-month conformity lapse grace period
- a change in the update frequency cycle to four years
- a conformity redetermination on existing transportation plans and TIPs within two years of certain actions on the state implementation plan (SIP) for air quality
- options to shorten the time horizon for conformity demonstration (but must include an informational regional emissions analysis)
- transportation control measure (TCM) substitution without requiring a new conformity determination or SIP revision, and adoption of substitute TCM rescinds previous TCM
- streamline conformity SIP requirements



AREA CHARACTERISTICS

Geography

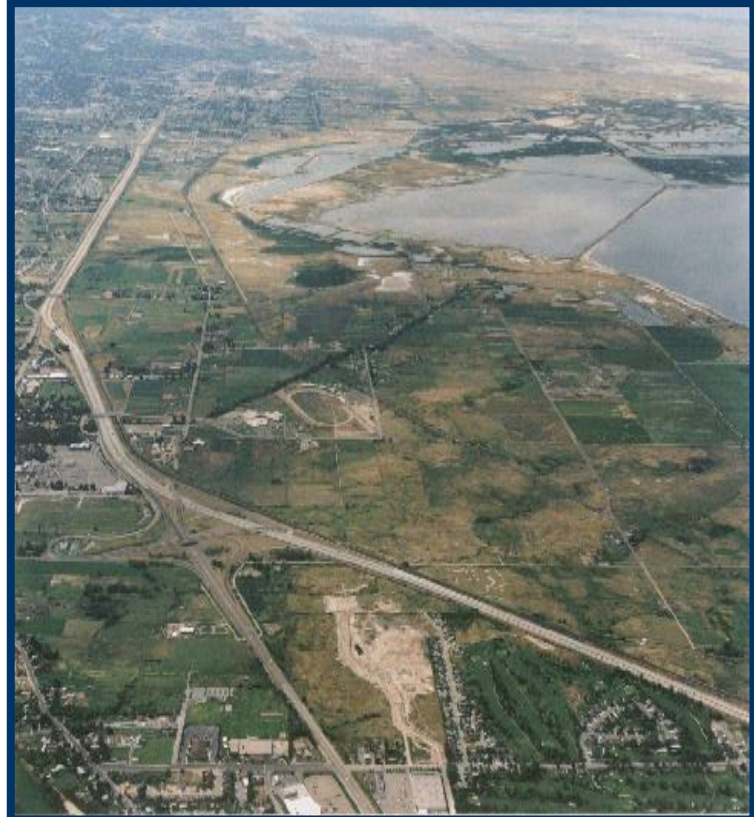
The Wasatch Front urban area is located in the northern part of Utah and is comprised of the Salt Lake City and Ogden - Layton Urbanized Areas, which encompass the developed regions of Salt Lake, Davis and Weber Counties. In general, the area is bounded by the Great Salt Lake and the Oquirrh Mountains on the west, the Wasatch Mountains on the east, Utah County on the south and Box Elder County on the north. The geographic features which bound the area on the east and west create a natural growth boundary. The area has a general linear configuration, being over 60 miles from north to south, while only 20 miles east to west at the widest point. Map 1-1 shows the Metropolitan Planning Area, the Tooele Rural Planning Area, the Ogden - Layton Urbanized Area, and the Salt Lake Urbanized Area for the Wasatch Front Region.

Environment

The Wasatch Front Region's physical environment will affect the type and location of future development, and the transportation system constructed to serve development. The area is situated in a unique environment that presents both opportunities and potential problems for the region.

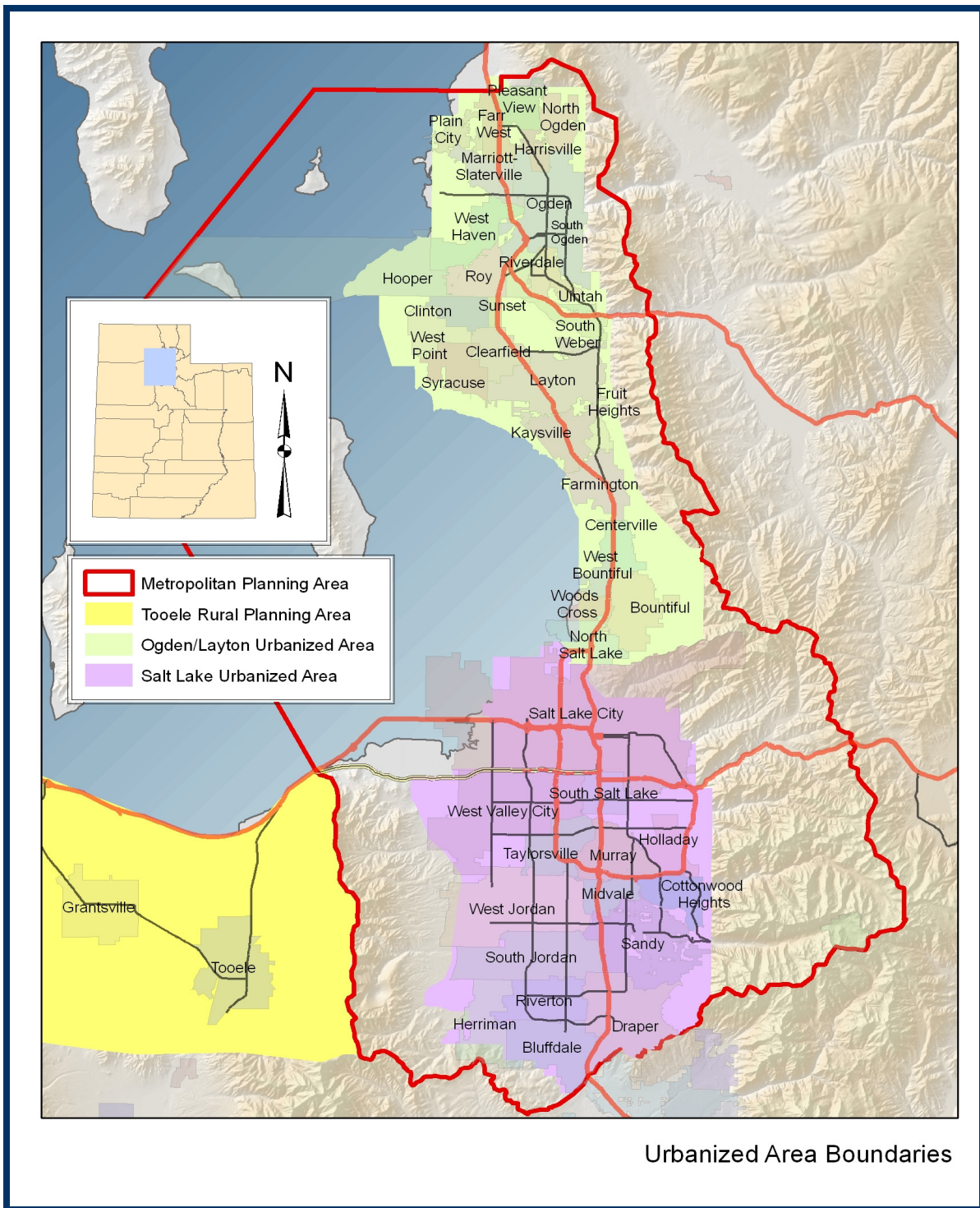
The Great Salt Lake is the dominant water feature in the area. Depending on the time of year and the drought cycle, the lake covers an average of 2,300 square miles in size. It is relatively shallow with maximum depths of not much greater than 20 feet. Variations in precipitation affect the stream flows and groundwater levels, and thus cause the lake to fluctuate dramatically in water level and area of coverage. The federal government, the State of Utah, and local governmental jurisdictions recognize that the Great Salt Lake has reached the flood stage when the water level reaches an elevation of 4217 feet. Hence development is restricted to the area above this level. The greatest and most significant complex of wetlands in the intermountain area can be found adjacent to and surrounding the Great Salt Lake. These wetlands provide important habitat to resident wildlife and internationally significant habitat for part of the year to possibly as many as one million migratory shorebirds and waterfowl that make annual migrations across North America. A majority of these wetlands are found on the east side of the lake, where most of the fresh water is received by the environs of the Great Salt Lake.

The steep slopes of the Wasatch Mountain Range were created by the Wasatch Fault, which runs the entire length of the urbanized area. The Wasatch Fault and other nearby faults highlight the potential for earthquakes in the area and the need to consider their possible impact on transportation facilities.



MAP 1-1

WASATCH FRONT URBANIZED AREA



Population

The first permanent Anglo settlers in the region arrived in the Salt Lake Valley in 1847. They soon began settling other parts of the region. In the 1850 Census, the population of Davis, Salt Lake, and Weber counties was 8,471 or 74.8% of the state total. By 2000, the combined population had increased to 1,333,914, but the share had dropped to 59.7% of the state total. The state Governor's Office of Planning and Budget projects the combined population to grow to 2,069,965 by 2030, but the share dropping even further, to 50.7% of the state total. Much of the growth is projected to occur in western Salt Lake County, northern Davis County, and western Weber County. Even with most of the projected growth in these areas, there will be significant infill and redevelopment in the currently developed areas. These trends can be seen in Map 1-2. Land supply in Salt Lake and Davis Counties may also come into play in this planning horizon. These two counties may approach "build out" population during this time frame.



Employment

In the past, the regional economy was heavily dependent on a limited number of industrial sectors, primarily mining (Kennecott Utah Copper Corporation) and government or military (Hill Air Force Base, Internal Revenue Service). In the past 30 years, the region's economy has diversified. No longer dependent on a limited number of sectors, the economy is now based on the service sector and other industries, such as health care, education, and local government. Agricultural industries continue to decline in importance on a regional scale. Map 1-3 shows the projected 2030 employment density for the Wasatch Front Urban Area. The distribution of commercial and industrial development will remain much as it is today.

New commercial development is projected in South Jordan, Riverton, and Tooele County. Additionally, dispersed areas of commercial development are starting to appear, such as the Fort Union area, Cottonwood Corporate Center, and Jordan Landing in the Salt Lake Valley. Small pockets of neighborhood scale commercial development are expected throughout the Wasatch Region in an effort to make neighborhoods more pedestrian-friendly. Large employment centers, such as Hill AFB, University of Utah, Salt Lake City International Airport, and downtown Central Business Districts will need to be served with an improved transportation system.

Commuter Characteristics

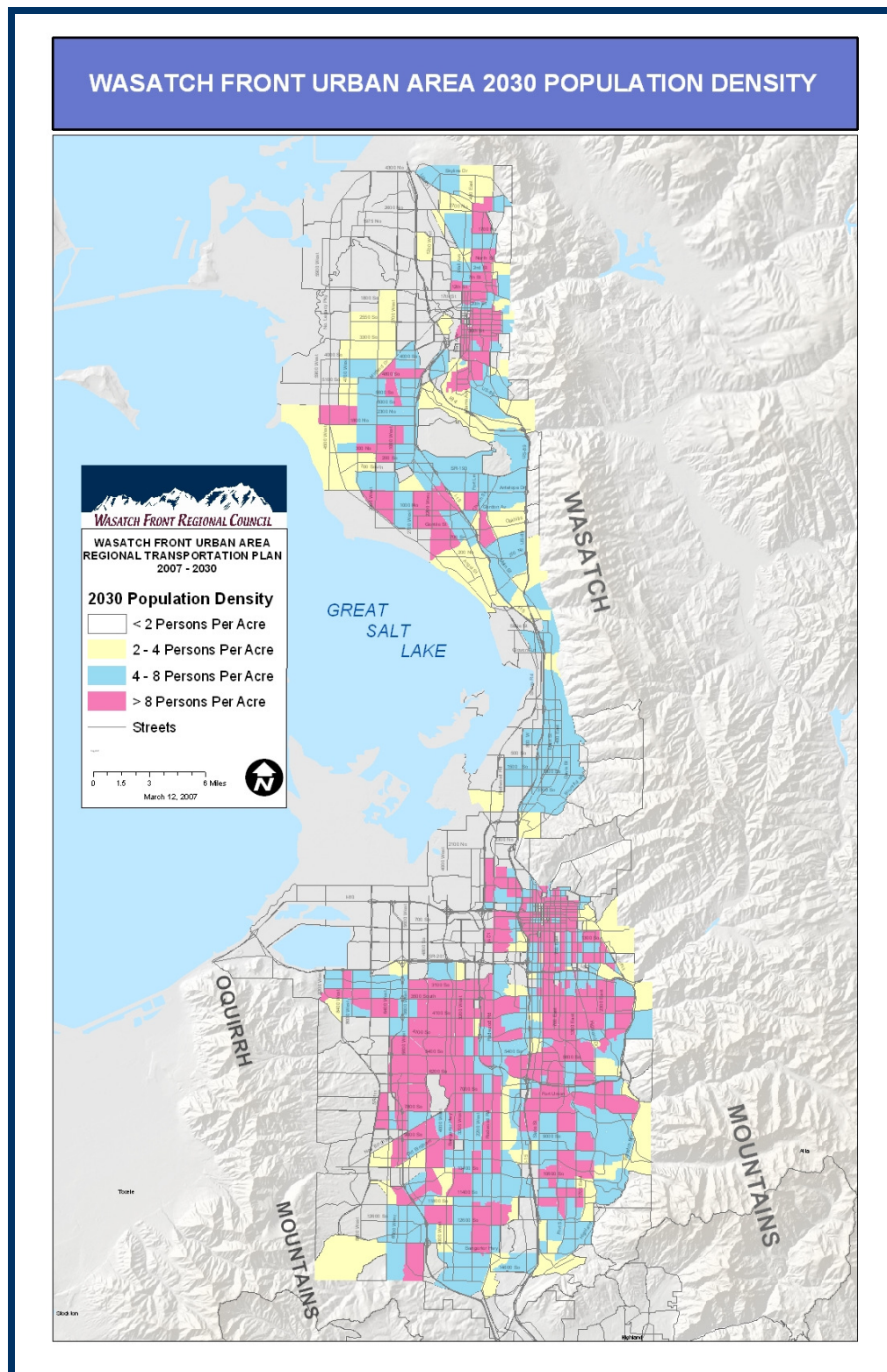
The 2000 Census provides a snapshot of the commuter characteristics in the region. Each workday, 73,203 commuters travel to Salt Lake County, mainly from Davis, Tooele, and Utah Counties. There are also a significant number of commuters that leave Salt Lake County for other counties. Inside the Region, the commuter patterns become less clear. Major commuting destinations include downtown Salt Lake City, West Valley City, and Provo.

As with most major metropolitan areas, the vast majority of commuting takes place in the single occupant vehicle. The 2000 Census was taken just five months after the UTA TRAX line was put into service. Being so new, its full effect on the commuting patterns is not clear from the Census data. With some TRAX extensions already completed, more in various planning phases, and the FrontRunner commuter rail line from Ogden to Salt Lake City under construction, the transit mode share should increase.



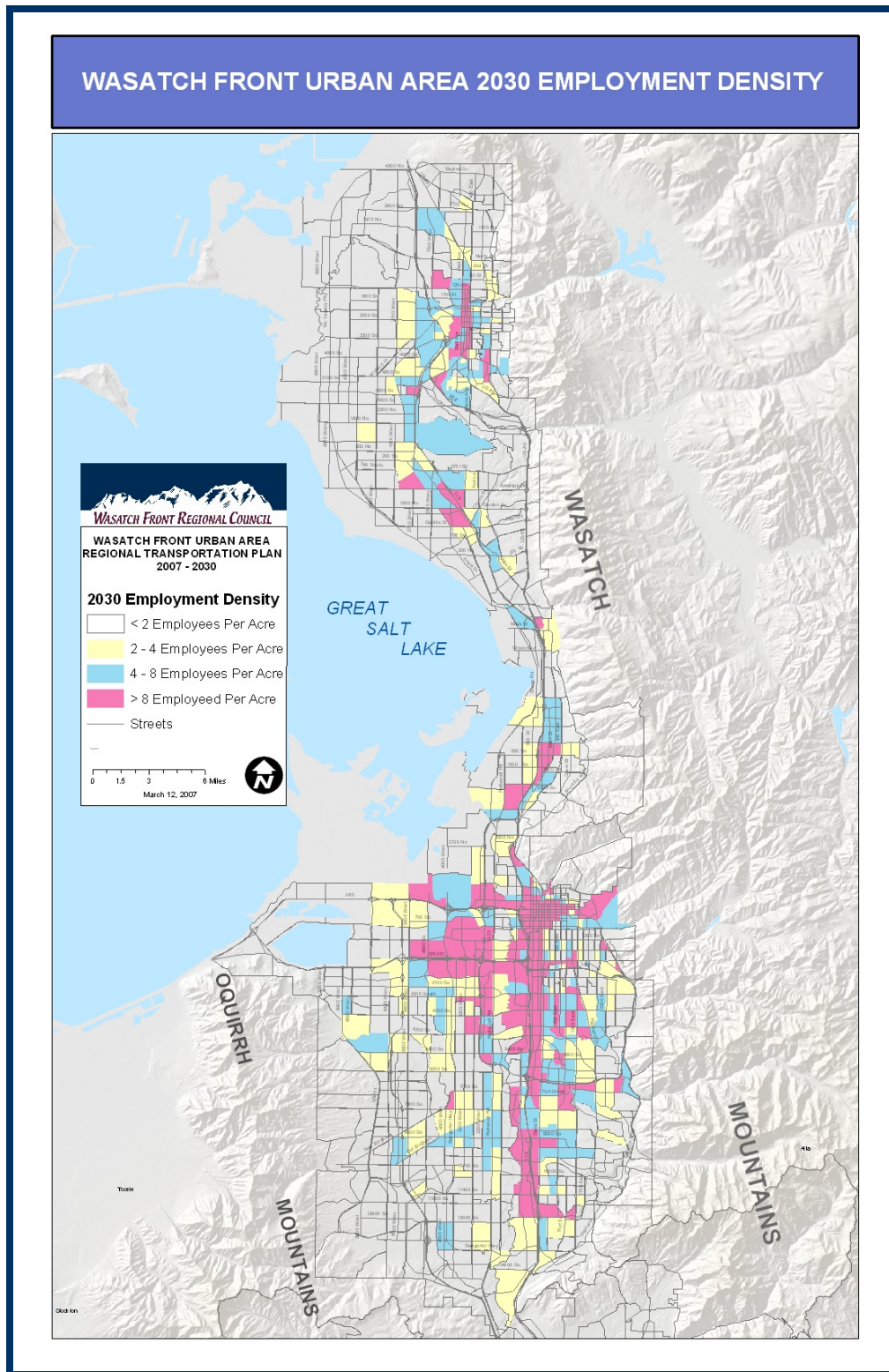
MAP 1-2

2030 POPULATION DENSITY



MAP 1-3

2030 EMPLOYMENT DENSITY



1.8

TRANSPORTATION AND LAND USE RELATIONSHIP

The relationship between transportation and land use is relatively complex. There are many factors about their inter-relationship that are not well understood, but research is continuing to contribute to our increased understanding. It is well understood that transportation and land-use patterns are inextricably linked. However, the public policies responsible for those patterns are not often well coordinated and understood, especially as land use decisions are made incrementally without a thorough analysis of potential consequences.

No singular force has had a greater influence on the overall pattern of land development in American cities than roads and highways. Building a road is fundamental to land development. Roads and mass transit provides new or improved access to land, which in turn is more likely to be developed because of its resultant increase in value and desirability. More and better transportation facilities decrease the cost (time and money) of travel within and between urban areas. Roads and the vehicles that use them are, therefore, instrumental and essential in the development of property. However, would the road have been built were it not for a demand or need for the land on which development could occur? And, what role do land use plans and public policy play in the pattern of development? The answer to the first question is yes. However, the answer to the second question requires a somewhat more involved response. There is a significant role that land-use plans and public policy play in land development. The decision as to whether or not to build roads, and where and what type of development should be allowed and possibly encouraged is a matter of public policy (land-use plans and ordinances) and land economics.

There are many other issues that should be addressed in analyzing the relationship between transportation and land use. For instance: Will building a new highway to relieve traffic congestion also encourage sprawling development in the areas served by the road? What supporting land-use policies should be adopted to take full advantage of expensive investments in new rail transit? And, are there specific policies and practices that can help state and local government officials deal more effectively with traffic congestion, urban form, infrastructure costs, quality of life, and other growth-management issues? Important questions such as these will need to be considered if a greater understanding between the transportation and land-use linkages are to be reflected in the planning processes, and more effective actions are to be implemented.

There are many questions to be answered about the relationship between transportation and land use, and academic research will continue. However, there are some conclusions about these relationships where a relatively strong consensus exists. These conclusions were articulated in a "White Paper" (2004) prepared for the Florida Department of Transportation by Steven E. Polzin, PhD. of the Center for Urban Transportation Research, University of South Florida, and used as a resource for the following discussion.

Development Density Or Intensiveness

Independent of other factors, higher density and / or intensity creates higher total travel demand from a given geographic zone, but enables and encourages shorter auto trips and higher pedestrian, bike, and transit use due to the concentration of activities. A higher development density is more supportive of viable transit alternatives and enables more activities to be served with shorter auto trips or pedestrian and bike modes of travel. Density (both residential and employment) is correlated with a host of other travel behavior influencing factors, such as transit availability, income, auto availability, operating costs, parking costs, centrality of location, and urban design features including pedestrian amenities. There appears to be a connection between density and vehicle miles traveled (VMT), with a certain amount of reduction in VMT being made possible, depending on the travel behavior variables listed above.



Mixed Use

Within a given area, the mix of uses influences the extent to which personal activity needs, such as employment, school, shopping, etc., can be served by development in the area. Mixing of compatible land uses enables shorter trips where biking and walking become viable options. This also enables shorter auto trips and supports efficient transit operations. The nature of the activity and the nature of the “mixing” of uses may influence the travel response. Mixing of uses can facilitate combining of trips, further impacting travel demand. Job-housing balance is most beneficial if there is balance in income distribution and in the coordinated development of housing and employment opportunities.

Urban Form

Urban form encompasses the nature of the transportation networks, whether grid, radial, or other; as well as the configuration of land use, such as monocentric versus polycentric. Urban form can favor one mode over others and may influence overall VMT by changing the impedance or cost of travel. The characteristics of urban form are clearly factors in travel behavior and VMT. The nature of the transportation network can influence the directness or indirectness of travel routes and the pattern of development can influence the viability of transit and other modes and the length of trips. Urban form influences accessibility, which is unquestionably a factor in travel behavior.

Urban Design

The orientation of a structure on a site relative to transportation infrastructure (parking, sidewalks, bus stops, covered walkways, seating, and other amenities) can impact the choice of modes. Transportation sensitive urban design generally offers an opportunity to make property more



accessible for alternative modes, while providing aesthetic, safety, convenience, and other benefits. When urban design is targeted to favor pedestrian, bike, and transit services, it can help reduce VMT.

Activity Scale

This factor refers to the level of activity at a given location and determines the size of the market area served by the facility. Larger-scale facilities also require larger land parcels and tend to result in locations on the edge of the built area. Larger facilities tend to result in longer access trips and reduced probability of using walk and bike modes, thus producing greater VMT.

Contiguosness of Development

It is common, particularly at the outer edges of developed areas, for a significant mix of undeveloped land interspersed with pockets of development. The skipped-over undeveloped land usually makes

alternative transportation unworkable and requires all external trips to or from the new development to be in motor vehicles. This mix of developed and undeveloped parcels produces longer auto trips and increased VMT. Encouraging contiguous development can result in reduced VMT. Contiguity has been shown to increase density in study areas and reduce travel. Contiguous growth can also result in reduced infrastructure costs, habitat preservation, and efficiencies in service delivery.

1.9

REGIONALLY IMPORTANT FACILITIES

The 2030 RTP recommends improvements to regionally significant highway and transit facilities. Regionally important roadway projects, as decided by the RTP Coordinating Committee, are those projects that are functionally classified as minor arterials or higher. All freeways and interstate related roads, such as I-15 and I-80, are included in this category, along with principal arterial surface streets such as 12600 South between 700 East and the Bangerter Highway in Salt Lake County, and those minor arterial surface streets as noted above. Regionally important transit facilities are fixed guideway projects. Fixed guideway projects include Commuter Rail (FrontRunner), Light Rail Transit (TRAX), Streetcar, and some Bus Rapid Transit projects. The RTP Coordinating Committee used the following guidelines to determine whether a highway and transit facility was to be defined as regionally important or not.

- Any new or existing facility with a functional classification of principal arterial or higher on the latest UDOT Functional Classification Map shall be considered regionally significant.
- Any fixed guideway transit service including light rail, commuter rail, or portions of bus rapid transit that involve exclusive right-of-way shall be considered regionally significant.
- As traffic conditions change in the future, the MPO's - in consultation with DAQ, UDOT, FHWA, and EPA (and UTA and FTA in cases involving transit facilities) - will consider 1) the relative importance of minor arterials serving major activity centers, and 2) the absence of principal arterials in the vicinity to determine if any minor arterials in addition to those listed in the section below should be considered as regionally significant for purposes of regional emissions analysis.

Regionally Significant Projects (Air Quality Determination)

Regionally significant roadway projects, as defined by the Environmental Protection Agency (EPA), in the Code of Federal Register, Chapter 40, Section 93.101, are different than the regional important projects defined above. Regionally significant projects are functionally classified as principal arterials, with the addition of minor arterials that should be treated as principal arterials. All freeways and interstates, such as I-15 and I-80, are included in this category along with surface streets such as 12600 South between 700 East and Bangerter Highway in Salt Lake County. Regionally significant transit projects are classified as fixed guideway projects. Fixed guideway projects include Commuter Rail, Light Rail Transit, Streetcar, and some Bus Rapid Transit projects.

Minor Arterials Determined To Be Regionally Significant

In consultation with DAQ, UDOT, FHWA, and EPA, and based on the inspection and engineering judgment of current traffic conditions, as well as on application of the "Process for Determining Regionally Significant Facilities for Purposes of Regional Emissions Analysis" agreed upon by the aforementioned agencies, the WFRC and Mountainland Association of Governments designate the following minor arterials as regionally significant.



Salt Lake County

300 West / Beck Street: 600 South north to I-15
Redwood Road: Bangerter Highway to Utah County line
SR-111: SR-201 to New Bingham Highway
New Bingham Highway: SR-111 to 9000 South

Davis County

Syracuse Road: I-15 west to Antelope Island
SR-108 (2000 West): Syracuse Road to Weber County line

Weber County

SR-108 (3500 West): Davis County line to Midland Drive
SR-108 (Midland Drive): 3500 West to Hinckley Drive
SR-79 (Hinckley Drive): SR-108 to I-15

Utah County

Redwood Road: Salt Lake County line to Highway-73

Process For Determining Significant Change In Design Concept And Scope

Changes to regionally significant projects may or may not necessitate a new regional emissions analysis. The following definitions and processes will be used to determine what changes to project concept and scope are to be considered significant or not for purposes of regional emissions analysis.

- Adding or extending freeway auxiliary lanes or weaving lanes between interchanges is not considered a significant change in concept and scope since these lanes are not normally included in the travel model.
- Adding or extending freeway auxiliary and weaving lanes from one interchange to a point beyond the next interchange is considered a significant change in concept and scope.
- A change to a regionally significant project defined in the Regional Transportation Plan that does not change how the project is defined in the travel model is not considered a significant change in concept and scope. These changes include but are not limited to lane or shoulder widening, cross section (other than the number of through lanes), alignment, interchange configuration, intersection traffic control, turn lanes, continuous or center turn lanes, and storage lanes.
- A change to a regionally significant project defined in the Regional Transportation Plan that does alter the number of through lanes, lane capacity, or speed classification as defined in the travel model is considered a significant change in concept and scope.
- Advancing or delaying the planned implementation of a regionally significant project that does not result in a change in the transportation network described in the travel model for any horizon year (as defined in CFR 93.101) is not considered a significant change in concept and scope.
- Advancing or delaying the planned implementation of a regionally significant project that does result in a change in the transportation network described in the travel model for any horizon year (as defined in CFR 93.101) is considered a significant change in concept and scope.



- Project changes not addressed in the above statements will be decided on a case by case basis through consultation with representatives from DAQ, WFRC, MAG, UDOT, UTA, FHWA, FTA, and EPA.

1.10

TRANSPORTATION MODELING AND ANALYSIS TOOLS

The Wasatch Front Regional Council and the Mountainland Association of Governments Travel Demand Model ("the model") is a tool for analyzing integrated land-use, transportation, and air quality factors. The model estimates the travel patterns of people, based on their demographic characteristics, where they reside and are employed, and transportation facilities available to them. The model forecasts where and by what mode (such as single occupancy autos, local bus, light rail, etc.) people are likely to travel and assign these trips to the travel mode that represent the best route for each particular trip. Travel model output is used to evaluate transportation corridors where future travel demand is likely to exceed the capacity of the facilities in the corridor, to identify and assess projects that meet travel demand, and to analyze air quality impacts of the transportation system.

The model includes several advanced features that place it on the cutting edge of the improved modeling methodology needed to meet the requirements of SAFETEA-LU and the Clean Air Act Amendments of 1990. In addition, several features recommended by the Travel Model Improvement Program (TMIP) of the US Department of Transportation, the Federal Highway Administration, the Federal Transit Administration, and the Environmental Protection Agency are incorporated into the model. The WFRC uses the model to perform comprehensive regional transportation analyses, and to evaluate various transportation and traffic impacts. Some of the most useful model outputs include: origin-destination flows, directional link vehicle volumes, vehicular travel times and speeds, and transit ridership estimates.



The target area considered by the model include all of the developable portions of Utah, Salt Lake, Davis and Weber Counties. They do not consider the canyons and the mountains to the east of the urbanized areas. The model is calibrated to reasonably represent 2005 "base year" travel conditions and patterns, a process in which model output is checked or "validated" against hard data. Trip rates, transit ridership and highway volumes are examples of the types of model outputs that are validated. When the model results do not match

the base-year values within an acceptable tolerance, parameters are adjusted until the model is acceptable. For future forecast years, the model output is reviewed for "reasonableness" to validate model results and model sensitivities. A detailed explanation of the WFRC's transportation modeling process and analytical tools can be found in Appendix E.

PUBLIC INVOLVEMENT SUMMARY

The WFRC solicited public participation and integrated oral and written comments received into the planning process. Input for the 2030 RTP was requested from various groups including freight hauling organizations, Native American groups, low income advocates, minority organizations, senior citizens groups, community councils, city councils, local councils of governments, other government agencies (at a stakeholders meeting organized by WFRC), environmental groups, disabled rights advocates, chambers of commerce, state legislators and the general public. The WFRC considered comments received from these groups and individuals in both the draft and final document. A summary of the public review process and record of public involvement in the 2030 RTP can be found in Appendix A.

Special Interest Outreach

WFRC staff members made dozens of visits to private citizens and the organizations noted above in order to identify transportation related problems and issues, receive input on possible solutions to growing travel demand, develop a series of RTP alternatives, and solicit comment on the draft 2030 RTP document.

Visioning Process

The WFRC, in partnership with the Mountainland Association of Governments and Envision Utah engaged the public in an 18 month visioning process to establish a 'Vision of the Future for the Wasatch Front.' This was an extensive process with thirteen workshops, four open houses and over 1,000 participants from all parts of the community and government. The result of the process was a set of growth principles derived by consensus that have been adopted by the Wasatch Front Regional Council and most of its member entities. These growth principles, developed through an extensive public process, now guide the development of the RTP and are an excellent example of how the public involvement process influences policy.



Public Open Houses

Two series of open houses regarding the RTP update process were held in Salt Lake, Davis and Weber Counties. The first series was for the "alternatives" phase of the RTP and was held during November 2006. The second series for the draft 2030 RTP was held during April and May 2007. Both series of public open houses were announced through notices and advertisements in local newspapers. Many local newspapers also ran news articles announcing the open houses and some sent reporters to the open houses to 'cover the story.' Also, approximately 2,000 e-mails were sent to the interested stakeholders on the WFRC mailing list who received electronic notice of the upcoming open houses with an invitation to attend.



The public open houses to review and receive input on the three regional transportation alternatives were held in October and November 2006 and were well attended. These open houses served to gauge public opinion on the three draft alternatives that were developed as part of the 2030 RTP planning process. All comments were carefully summarized and responded to by staff. The last series of public open houses, held during April and May 2007, presented the draft 2030 RTP for public review and comment. The WFRC staff compiled written comments and summarized verbal comments received from the public after each open house and prepared a written response to each concern.

Electronic Communication

All documents and maps regarding the RTP were made available on the WFRC website. Interested parties were invited to visit the website and review and comment on the documentation. Many e-mails received as comments on the draft 2030 RTP were from this source. In addition, as noted above, thousands of e-mails were sent out soliciting public review and comment.

Media Relations

Regular efforts to include the local news media in WFRC actions resulted in a number of articles about Wasatch Front Regional Council transportation planning efforts. Regional Council Chairman, Dennis Nordfelt, and several WFRC staff members were quoted in news articles during the 2030 RTP development process.

Conclusion

The WFRC prepared a draft project lists and maps of the *Wasatch Front Regional Transportation Plan: 2007-2030* in February 2007 for distribution to interested public agencies, elected officials, local communities, and the general public. A formal public review period was held during April and May 2007. Interested persons and groups were invited to review and offer comments on the draft 2030 RTP in either formalized public open houses, or individually at their convenience. The finalized document was reviewed and approved by the Wasatch Front Regional Council on May 24, 2007. Copies of the *Wasatch Front Regional Transportation Plan: 2007-2030* are available through the Wasatch Front Regional Council office, the WFRC website, and select area libraries.

1.12 THE UNIFIED PLAN

The Wasatch Front Regional Council's regional transportation planning process for the 2030 RTP was different than the previous long-range transportation planning processes. For the first time, the planning process used a visioning framework called Wasatch Choices 2040, which provided Regional Growth Principles, a "Vision," and implementation strategies. In addition, the WFRC's Regional Transportation Plan was coordinated much more closely with the Long Range Transportation Plan of the Utah Department of Transportation, and with the Mountainland Association of Governments Regional Transportation Plan. The Utah's newest and smallest MPOs, the Dixie Metropolitan Planning Organization, and Cache Metropolitan Planning Organization, also coordinated their plans with UDOT's Statewide Transportation Plan. UDOT's coordination and cooperative planning efforts culminated with the development of the "Unified Plan," covering both the rural and urban areas of the state.

In the past, UDOT and the four MPOs communicated and notified each other about their planning efforts, but there was no real effort made to coordinate certain or all aspects of the five entities' transportation plans. Each planning entity used different financial assumptions, planning cycles, baseline data, priority-setting procedures, formats, etc.



In 2003, UDOT published for the first time its *Long Range Transportation Plan: Utah Transportation 2030*. The publishing of this plan was a positive step, but it had an unintended consequence. For the first time, all of the long-range transportation plans of the MPOs and UDOT were in published form and could be scrutinized and evaluated, not just by the general public, agencies, and other entities, but also by the Utah State Legislature. These decision-makers found from perusing the plans and from vocal presentations on funding needs, a number of inconsistencies that created confusion and raised serious questions. The planning entities were not very successful in reconciling inconsistencies and the different approaches taken in the Plans. This resulted in a loss of credibility among legislators who questioned the information in the plans as well as the entities that prepared them.

A lesson was learned from this situation, which was that future plans would need to be grounded in the principles of collaboration and coordinated in order to more effectively convey transportation and funding needs. As the WFRC began preparing for its next plan update cycle in 2003, it became obvious that more coordination between MAG and possibly UDOT would be needed. Brainstorming discussions between the Executive Directors of the WFRC and MAG resulted in a plan of action to collaborate and coordinate the planning processes of the two MPOs. In addition, UDOT and the other MPOs were given an invitation to participate in this effort, which was accepted by all. A functional organization framework was subsequently established, which consisted of an Executive Committee (executive directors of the four MPOs and UDOT's Planning and Programming Engineer), Coordinating Committee (UDOT and MPO staff involved in Plan preparation), and three Subcommittees for finance, technical aspects, and public involvement. UDOT was selected to manage the process, since it is involved in transportation planning for the entire state. The planning coordination process that was developed and organized by the five entities, and the development of a "Unified Plan", was a major undertaking for UDOT, requiring additional assistance. Therefore, it secured a consultant to accomplish many of the tasks involved in the management of the coordinated planning process and in preparing the "Unified Plan."

As the process has evolved, each of the MPO's has accepted responsibility for preparing a transportation plan for the urbanized area for which it has planning responsibility. However, the Statewide "Unified Plan" contains the essence of these plans, and will, for the first time reflect a common approach and planning schedule; financial assumptions and inflation factors; consistency in document organization; a common public involvement approach; consistent criterion for project selection and prioritization process; etc. With this Unified Plan it is hoped that many of the criticisms and inconsistencies that were apparent in the past will be overcome, and that interactions with the Legislature on transportation priorities and funding issues will be more productive.

Joint Policy Advisory Committee

The WFRC and the Mountainland Association of Governments agreed in 2004 to form a joint committee to look at areas of common interest in transportation planning. The metropolitan areas of Utah County and Salt Lake County have essentially grown together and creation of the Joint Policy Advisory Committee was a response to the recognized need for a coordinated planning process. The Utah State Legislature has also mandated cooperation between adjacent metropolitan planning organizations. The Committee has grown to include senior representatives from UDOT, UTA, the Dixie MPO and the Cache MPO. Important topics of discussion include the development of the RTP, transportation funding and legislation, major transportation project coordination and other regional transportation issues.



