



Financially Constrained RTP

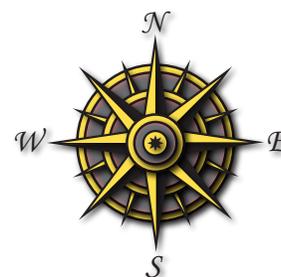
The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) was the first federal transportation act to require that long range transportation plans developed by Metropolitan Planning Organizations (MPO) include a financial plan to fund recommended highway and transit facility improvements. ISTEA also required that long range plans be fiscally constrained, meaning only those new facilities and recommended improvements which could be funded using existing and reasonably available projected revenue streams could be included in MPO long range transportation plans. The Transportation Equity Act for the 21st Century (TEA-21), and the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), the most current federal transportation legislation, also requires that a financial plan be part of the overall long range transportation plan for a region. The purpose of this requirement is to ensure that planned improvements included in the RTP can be paid for and that air quality benefits assumed for the implementation of the plan are realistic. These realistic estimates of emissions reductions are needed for the air quality conformity analysis required by SAFETEA-LU and the Clean Air Act Amendments of 1991.

Federal guidelines on preparing financial plans state: “The financial plan should compare the annual revenue from existing and proposed funding sources that are dedicated to transportation uses, and the annual costs of constructing, maintaining and operating the transportation system over the period of the Long Range Plan. The annual revenue by existing revenue source (at the local, State, and Federal level) dedicated to transportation improvements should be calculated and any shortfalls identified. Proposed new revenues should cover all forecasted capital, operating, and maintenance costs. All cost and revenue projections should be based on the best available data and trends. This requirement does not preclude MPO’s and states from also developing unconstrained ‘needs’ plans.”



Chapter 6

Photo at Left: New UTA Siemens S70 low floor light rail vehicles provide improved access for alighting and disembarking TRAX trains. These vehicles are featured in this photo, captured by James Belmont, of TRAX running along the University (Red) Line between the University Medical Center and Fort Douglas Stations.



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For the Wasatch Front Urban Area, this requirement means that many of the projects recommended in previous Long Range Transportation Plans can no longer be included in a financially constrained 2040 RTP. Long range transportation plans prepared before 1991 were based on need and identified facilities to serve projected transportation demand of the Area in the future. These pre-1991 long range transportation plans did not always identify the means to pay for their recommended facility improvements. At the most, these previous efforts estimated how much additional revenue would be needed and listed some potential sources to meet these needs. However, the long range transportation plans did not include a commitment to actually pursue these funds, and in many cases, the additional funds required could not reasonably be expected.

Finally, SAFETEA-LU allows for illustrative highway and transit projects to be included as part of a regional long range transportation plan. These illustrative projects are those which cannot be included in a fiscally constrained long range plan, but which would be included if a viable future funding sources could be identified. The 2040 RTP includes a number of unfunded (illustrative) projects that are not covered by current funding sources identified in this financial plan. However, if prospective regional funding sources can be identified for the financing of these projects in the future, they will then be included as part of future regional transportation plans.

Potential revenue sources are summarized in this chapter and estimates of future revenues from these sources are made for the 2040 RTP. Estimates are made of costs to meet the projected needs of the Regional Transportation Plan through the year 2040. Costs include what will be required to meet the needs identified in the 2040 RTP as well funding required for general administration and the operation and maintenance of the existing transportation system. Appendix M contains more detailed information on revenue and cost assumptions and projections used to determine the resources available to implement the 2040 RTP.

OVERVIEW OF REVENUE ASSUMPTIONS

Po Earlier in the plan preparation process the Wasatch Front Regional Council (WFRC), the Utah Department of

Transportation (UDOT), the Utah Transit Authority (UTA), the Mountainland Association of Governments (MAG), the Dixie Metropolitan Planning Organization (Dixie-MPO), and the Cache Metropolitan Planning Organization (Cache-MPO) formed a financial committee to developed estimates of available revenues based on projected sources that will be available for transportation improvements through the year 2040. Included in these revenue estimates are federal, state and local sources authorized for highway and transit improvements. Assumptions were made concerning revenue growth and new or increased sources of funds. The projections and assumptions used are discussed in the balance of this section. A more detailed description of potential federal, state, and local revenue sources for the Wasatch Front Regional Transportation Plan: 2011-2040 has been provided in Appendix M.

HIGHWAY REVENUE SOURCES

It has been assumed that federal, state, and local government revenues will, in fact, be available for the recommended highway improvements found in the Wasatch Front Regional Transportation Plan: 2011-2040. These revenues were estimated for the years 2011 through 2040. Separate estimates have been made for funds that will be available to UDOT and funds that will be available for local jurisdictions.

Revenue sources for UDOT estimates include federal funds and state funds. It is assumed that federal funds grow by two percent a year. Based on historic trends it is assumed state motor fuel tax revenues will increase at a two and a half percent rate per year. It is assumed that state special fuel tax revenues will increase at a five percent rate per year. In addition, it is assumed that a five cent per gallon increase in the fuel tax will be adopted in 2014, 2024, and 2034. It is assumed that state vehicle registration revenue will be increased by \$10 per year in 2018, 2028, and 2038.

The Transportation Investment Fund / Centennial Highway Fund (TIF/CHF) is currently funded with state auto-related sales tax (approximately 8.3 percent) and general fund monies. The TIF was created and funded by the Utah State Legislature in 2005. The CHF was enacted in 1997 and funded in part with appropriations from state and

federal money set aside for use in building capacity-increasing transportation projects. These two programs were combined into one program in 2010. The TIF/CHF bond is projected to be paid off by 2020. The remaining portion of the state auto-related sales tax, totaling approximately 17 percent, is assumed to be allocated by the Utah State Legislature by 2017 to fund future TIF/CHF bonding programs. The source of revenue for the Critical Highway Needs Fund (CHNF) is currently the State General Fund. The CHNF was created in 2008 and funded by an appropriation from the Utah State Legislature. The bond used to fund the CHNF is projected to be paid off by 2027. Revenue for the Highway Construction Program (HCP) and Transportation Investment Fund \$55 (TIF\$55) are currently provided from the State General Fund monies and funding transfers from the TIF/CHF programs. Both the HCP and TIF\$55 programs will expire in 2015.

The main sources of assumed revenue available for regional and local road projects are:

- Federal funds from the Salt Lake Area and Ogden – Layton Area Surface Transportation Programs (STP) and the Congestion Mitigation / Air Quality Programs (CMAQ);
- Class B and C Funds allocated to municipalities and counties from state highway user revenues;
- Salt Lake County’s 1/4 of 1/4 cent sales tax, less .0125 percent (.05 percent);
- Salt Lake County’s Proposition 3 sales tax (.0675 percent);
- Weber County’s third quarter local option sales tax (.125 percent)
- \$10 vehicle registration fees for corridor preservation in Salt Lake, Davis and Weber Counties in effect since 2006 and 2007;
- Allocations from the general funds of local governments;
- Future increases in local option sales taxes for transportation projects in Salt Lake (.1375 percent in 2017), Davis (.125 percent in 2013, and .125 percent in 2017), and Weber (.125 percent in 2017) Counties;
- Future \$5 vehicle registration fees in Salt Lake, Davis, and Weber Counties anticipated for adoption in 2020, 2030, and 2040; and
- Future adoption of five cent (\$.05) local option fuel taxes in 2027.



STATEWIDE HIGHWAY REVENUES

Working with WFRC staff, the joint Finance Committee developed estimates of projected revenues that will be available to UDOT between 2011 and 2040. These revenues come from general federal and state transportation funds and revenue, the TIF/CHF, and CHNF, as discussed below. Further information regarding these projections are included in Appendix M.

Federal Revenue

The Intermodal Surface Transportation Efficiency Act (ISTEA), adopted in 1991, established several spending programs for the use of federal funds for highway improvements sponsored by UDOT. TEA-21, the federal transportation bill enacted in 1998, and SAFETEA-LU continued these programs at higher funding levels. These programs include the Interstate Maintenance, National Highway System, Any Area Surface Transportation, STP Safety and Enhancement, and Bridge Replacement programs. A modest growth of two percent per year for each program was assumed for the period 2011 through 2040. UDOT administered, and special programs including

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the state match, will provide approximately \$9,919,000,000 statewide. This amount does not include federal funding administered by the metropolitan planning organizations or the Joint Highway Committee.

State Funds

The state of Utah's revenues allocated for transportation are primarily generated through highway user fees. These fees include motor fuel and special fuel taxes, vehicle control fees, motor vehicle registration, proportional registration, temporary permits, special transportation permits, highway use taxes, safety inspection fees, and miscellaneous fees. In addition, the Utah Legislature has programmed state general funds to support UDOT projects. To project future revenues, historical growth rates of about 3 percent were used for each of the sources listed above, with the exception of 2.5 percent for motor fuel tax, 5 percent for special fuel tax, and about 2 percent for vehicle registration. The state will generate about \$29,657,000,000 from these sources between 2011 and 2040.

State revenue projections also assume future increases in state fuel and special fuel tax. The state gasoline and special fuel tax has increased a total of five times from seven cents per gallon in 1978, to 24.5 cents per gallon in 1997. The latest increase was five cents per gallon, approved in 1997, dedicated to the CHF program. In 2005, the State Legislature approved the use of approximately half of the state sales tax associated

with auto-related sales, approximately 8.3 percent of total sales tax revenues, for highways. These funds initially were to be used to pay off the CHF bonds.

Current trends indicate that it is reasonable to expect the State Legislature to continue to raise revenues for highways every five to ten years. The 2040 RTP assumes the equivalent of a five cents per gallon of gasoline and special fuel tax increase in the years 2014, 2024, and in 2034. The 2040 RTP also assumes that by 2017 the remaining half of the auto-related sales tax will be designated for highways.

In establishing the Centennial Highway Fund in 1996, the State Legislature demonstrated its commitment to transportation by greatly increasing the amount of state general fund revenue going to UDOT. The CHF program initially assumed general fund revenues up to \$145,000,000 per year, but it was reduced to approximately \$60,000,000 per year due to State Budget constraints. The fund was increased to approximately \$150,000,000 per year in 2005 with the addition of half of the auto-related sales tax. A growth rate of about five percent per year means TIF/CHF funding is now close to initial funding projections. The Finance Committee assumed that after the TIF/CHF bonds are paid for, the auto-related and general funds dedicated to that purpose will be available for future TIF/CHF and CHNF programs. These funds will generate \$18,878,000,000 and \$1,900,000,000 respectively statewide.

TABLE 6-1
Projected Statewide Highway revenue 2011-2040

| Source | Amount |
|--|-------------------------|
| FEDERAL REVENUE | |
| Highway Trust Funds | \$9,919,000,000 |
| STATE REVENUE | |
| Highway User Funds | \$29,657,000,000 |
| Transfers Appropriated to Other State Agencies | (\$10,173,000,000) |
| Transportation Investment Fund / Centennial Highway Fund (TIF/CHF) | \$18,787,000,000 |
| Centennial Highway Needs Fund (CHNF) | \$1,900,000,000 |
| TOTAL STATEWIDE REVENUE AVAILABLE | |
| | \$50,090,000,000 |

Transfers Appropriated to Other State Agencies

Not all of the highway user revenues are available to UDOT. In the past, approximately three percent of these funds have been diverted to other agencies, such as the Highway Patrol, Driver's License Division, and the Utah State Tax Commission. Funding is also diverted to the Corridor Preservation Fund and the State Parks Access Roads Program (from a 1/16th of a cent sales tax allocation). Of the remaining amount, 30 percent (as of 2008) is transferred to cities and counties in the form of Class B and C funds. UDOT estimates that the future amount of diversions to other agencies will continue at the same rate as in previous years. The total amount of transfers and diversions from 2011 through 2040 statewide is approximately \$10,173,000,000. Table 6-1 summarizes the amount of statewide highway revenue projected through the year 2040.



LOCAL HIGHWAY REVENUES

The main sources of local revenues for transportation projects are: (1) federal funds allocated for the Salt Lake Area and Ogden – Layton Area Surface Transportation Program and the Congestion Mitigation / Air Quality Program; (2) Class B and C Funds from state highway user revenues for Counties and Cities, including the 1/16th cent sales tax for park access, and corridor preservation; (3) locally general funds; and (4) local option taxes. In addition, innovative sources will need to be used in the future to help finance specific highway improvements recommended in the 2040 RTP. The following section describes the various funds that are available to local cities and counties within the region. Further information regarding these projections are included in Appendix M.

Federal Funds

ISTEA established new or reformulated federal spending programs which WFRC administer, to fund highway improvements in urban areas. TEA-21 and SAFETEA-LU continued these programs at higher funding levels. These programs are the Salt Lake Area and Ogden - Layton Area

Surface Transportation Programs (STP) and Congestion Mitigation / Air Quality Programs (CMAQ). As with the other federal program revenues, a modest growth rate of two percent per year for each program was assumed for the period between 2011 and 2040. These funds can be used for projects on the state highway system, as well as on local streets. Based on past trends, the RTP assumes that approximately 60 percent of STP funds will be used for state facilities and the other 40 percent will be used for locally owned facilities. The CMAQ funding in the RTP is assumed to be split with 50 percent being used for state facilities, 10 percent for local facilities, and the remaining 40 percent for UTA transit facilities.

Class B and C Funds

Class B and C road funds are allocated from the state's highway user fees revenues collected by the State. Currently 70 percent of the highway user fees are directed to UDOT and 30 percent are diverted to the Class B and C Fund. Class B and C funds are then divided between counties and municipalities based on a formula using population and road miles. Based on the current allocation formula, the Wasatch Front Urban Area currently receives approximately 39.6 percent of the Class B and C funds. Although the allocation formula may change in the future, the current percentage was used for the projection of future funding available from this category. Approximately \$3,583,000,000 is projected to be generated between 2011 and 2040 for the municipalities and counties in the WFRC urban area.

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General Funds

Municipalities and counties along the Wasatch Front program a significant amount of locally general funds for highway maintenance and improvement. Current and past general fund spending on highways by municipalities and counties was examined to project future revenues. Based on the information provided in a survey of Wasatch Front communities, local governments are projected to spend about \$104,000,000 on highway improvements in 2011. These local expenditures are projected to grow by three percent a year through 2040 for a total of approximately \$4,960,000,000.

Innovative Sources

In the future local governments will need to consider new and innovative highway funding programs. Many already levy transportation impact fees on new developments. In addition, developers are a source of funding for major projects which benefit their development. These and other unique and innovative sources will provide funding over the next thirty years for local highway projects. It is assumed that a total of approximately \$600,000,000 will be provided from the revenue.

Local Option Funds

The Utah Department of Transportation was to have received a one-quarter of the one-quarter cent share of the transit sales tax in Salt Lake County in perpetuity, as approved by the electorate in November of 2000. The one-sixteenth of a cent (.0625 percent) local option sales tax was designated for state highway projects in Salt Lake County by earlier action of the Legislature. However, UDOT's portion was reduced to .05 cent in 2006 to compensate for the loss of sales tax on food to transit. WFRC is estimating that this sales tax levy will generate approximately \$516,000,000 between 2011 and 2040. The State Legislature authorized the use of local option sales taxes for both highways and transit. Based on the Salt Lake County Council of Governments (COG) ranking and rating process for the third quarter sales tax, UDOT will receive a portion of the one-quarter cent sales tax approved in Salt Lake County in 2006. Approximately a quarter of the one-quarter percent (.0625 percent) sales tax is projected to be used for state highways from this local option sales tax. Weber County passed their third quarter local option sales tax in 2008, but local officials have not designated an amount or percentage that will be spent on highway or transit projects.

TABLE 6-2
Local Option Sales Tax – Split by Mode

| Quarters | Year | Transit | Highway | Total |
|-------------------------|---------|--------------------------------|---------|-------|
| SALT LAKE COUNTY | | | | |
| 1st, 2nd, 3rd | Current | $0.50 + .05 + 0.1375 = 0.6875$ | 0.1125 | 0.80 |
| 4th, 5th | 2017 | 0.3625 | 0.1375 | 0.25 |
| Total | | 1.05 | 0.25 | 1.30 |
| DAVIS COUNTY | | | | |
| 1st, 2nd | Current | $.50 + .05 = 0.55$ | 0.00 | 0.55 |
| 3rd | 2013 | 0.125 | 0.125 | 0.25 |
| 4th, 5th | 2017 | 0.375 | 0.125 | 0.50 |
| Total | | 1.05 | 0.25 | 1.30 |
| WEBER COUNTY | | | | |
| 1st, 2nd, 3rd | Current | $.50 + .05 + .125 = 0.675$ | 0.125 | 0.80 |
| 4th, 5th | 2017 | 0.375 | 0.125 | 0.50 |
| Total | | 1.05 | 0.25 | 1.30 |

WFRC has made an assumption that about half of the one-quarter percent (.125 percent) sales tax will be used for roadway projects. The 2040 RTP predicts this trend to follow in Davis County in 2013 and about half of the one-quarter percent (.125 percent) will also be used for roadways projects. The 2040 RTP also assumes that an additional 1/2 cent sales tax will be approved in all three Counties in 2017, with about .1375 percent for highways available in Salt Lake County,

.125 percent for highways in Davis County, and .125 percent for highways in Weber County. The remaining increases in local option sales taxes would go towards transit. Table 6-2, gives a more detailed allocation of the local option sales tax. Sales tax was projected to grow at five percent per year after 2015, and incrementally increase between 2011 and 2015 in anticipation of a recovering economy.

TABLE 6-3
Projected Regional and Local Highway Revenue 2011 - 2040

| Source | Amount |
|--|------------------------|
| REGIONAL REVENUE | |
| Surface Transportation Program (STP) (60%) | \$503,000,000 |
| Congestion Mitigation / Air Quality (CMAQ) (50%) | \$160,000,000 |
| Salt Lake County ¼ of ¼ percent sales tax less .0125% (.05%) | \$516,000,000 |
| Salt Lake County Prop 3 Sales Tax (.0675%) | \$645,000,000 |
| \$10 Vehicle Registration Fee – Salt Lake County | \$357,000,000 |
| \$10 Vehicle Registration Fee – Davis County | \$101,000,000 |
| \$10 Vehicle Registration Fee – Weber County | \$82,000,000 |
| Salt Lake County Vehicle Registration Fee (2020, 2030, 2040 - \$5) | \$221,000,000 |
| Davis County Vehicle Registration Fee (2020, 2030, 2040 - \$5) | \$63,000,000 |
| Weber County Vehicle Registration Fee (2020, 2030, 2040 - \$5) | \$51,000,000 |
| Salt Lake County Sales Tax (2017- .1375%) | \$1,274,000,000 |
| Davis County Sales Tax (2013 - .125%, 2017- .125%) | \$416,000,000 |
| Weber County Sales Tax (2008 - .125%, 2017- .125%) | \$385,000,000 |
| Salt Lake County Local Option Fuel Tax (2027-\$.05) | \$852,000,000 |
| Davis County Local Option Fuel Tax (2027-\$.05) | \$251,000,000 |
| Weber County Local Option Fuel Tax (2027-\$.05) | \$158,000,000 |
| TOTAL REGIONAL HIGHWAY REVENUE | |
| | \$6,035,000,000 |
| LOCAL REVENUE | |
| Class B and C Program Funds | \$3,583,000,000 |
| Surface Transportation Program (STP) (40%) | \$335,000,000 |
| Congestion Mitigation / Air Quality (CMAQ) (10%) | \$32,000,000 |
| Local General Fund Contributions | \$4,960,000,000 |
| Innovative Funding Sources | \$600,000,000 |
| TOTAL LOCAL HIGHWAY REVENUE | |
| | \$9,510,000,000 |

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Additionally, a portion of the \$10 vehicle registration fee for corridor preservation, approved in Salt Lake County in 2006 and approved in Davis and Weber Counties in 2007, could be used for state facilities. Vehicle registrations were projected to grow at about two percent per year through 2040, existing local option vehicle registrations will generate approximately \$357,000,000 in Salt Lake County, \$101,000,000 in Davis County, and \$82,000,000 in Weber County. The local option vehicle registration is assumed to increase by \$5 per vehicle in 2020, 2030, and 2040. This new local option vehicle registration will generate approximately \$221,000,000 in Salt Lake County, \$63,000,000 in Davis County, and \$ 51,000,000 in Weber County. It is assumed that a local option fuel and special fuel tax will be imposed in Salt Lake, Davis, and Weber Counties in 2027. The local option fuel tax is projected to be levied at five cents per gallon. This new local option fuel tax would generate approximately \$852,000,000 in Salt Lake County, \$251,000,000 in Davis County, and \$158,000,000 in Weber County.

Table 6-3 summarizes the amount of regional and local highway revenue projected through 2040.

TRANSIT REVENUE SOURCES

The Utah Transit Authority operates and maintains a substantial system of buses and rail within the Wasatch Front Region. The UTA has undertaken an extensive expansion of its rail system that will continue for several years. UTA maintains a master financial spreadsheet which it uses for annual budget preparation, to demonstrate its financial capacity to the Federal officials for New Starts Projects, and to prove its credit worthiness to bond rating agencies. This spreadsheet was expanded and used for estimating revenue and costs associated with the 2040 Regional Transportation Plan.

Much of the existing revenue flows for transit are dedicated to current construction and operations. It is anticipated that about 10 to 20 percent of the revenues required to build and operate the 2011-2040 RTP projects will come from funds currently anticipated in the UTA long-range budget. The transit system expansion envisioned by the 2011-2040 Regional Transportation Plan will require significant new revenue sources. The primary new revenue sources for the transit services proposed in the Regional Transportation Plan

are an equalization of the local option sales taxes across all three counties at one percent dedicated to transit, bonding, discretionary federal funds, and project related passenger fares.

Transit in the Wasatch Front Region has been very successful and has garnered strong support. Continued growth of the transit system is a regional priority. The Regional Transportation Plan anticipates that about 36 percent of the revenue required to build and operate the 2011-40 RTP projects will come from new local option revenues. Weber County dedicates a 0.55 of a cent local option sales tax to transit and has an additional 0.25 of a cent local option sales tax dedicated to transportation. Davis County has a 0.55 of a cent local option sales tax dedicated to transit. Salt Lake County has a 0.8 cent local option sales tax with 0.6825 of a cent dedicated to transit. The last decade has seen much growth in transit revenues. This increase in revenue demonstrates transit support amongst local governments, the business community, citizens, and the State Legislature. The 2040 Regional Transportation Plan anticipates that support will continue to accelerate in step with the region's population growth and increasing needs for alternatives to single passenger vehicles.

The Region has also seen substantial success in competing for New Starts funding. New Starts is the premiere discretionary federal funding source for new projects. Regional growth initiatives such as Wasatch Choice for 2040, the ability of the Region to select cost effective projects, and the ability of UTA to construct these transit projects within budget and on schedule has encouraged the Federal Transit Administration to invest further in the Region. The Regional Transportation Plan envisions that UTA's ability to attract New Starts Funding will continue and priority will continue to be given to funding transit over the next 30 years. It is anticipated that that 25 percent of the revenue required to build the 2011-40 RTP projects will be derived from federal discretionary funding. Funding of this magnitude is the equivalent to 25 percent of the construction costs or 16 percent of all RTP project construction and operating costs.

In 2008, when UTA issued its bonds for the TRAX and FrontRunner expansions, the Fitch [bond] Rating Service gave UTA a 'AA' rating noting that that the rating reflects "the strength and diversity of the authority's service area in

Utah's economic epicenter... and the demonstrated record of successfully and conservatively managing transit service operations and expansion." (Mar 13, 2008 Deseret News) The company representative also stated that Fitch "hasn't given any higher rating than 'AA' to any municipal transit agency in the country." UTA has been able to maintain these good bond ratings and was, as late as October 2010, able to maintain its senior lien bonds at an AAA level. Currently UTA has bonds that extend to 2050. Unfortunately, UTA has little bonding authority available through 2025 with its current revenue streams. However, more bonding authority will become available as additional revenues anticipated in the RTP are realized and current bonds are paid down. The RTP anticipates that about 20 percent of the RTP funding will come from bonding retired after 2040, all while staying within UTA's current bonding authority.

Finally, amongst the primary revenues sources are the fares paid by the transit users for the new services provided in the RTP. A conservative approach to estimating these fare revenues was taken using the WFRC travel model, UTA ridership elasticity values, and UTA assumptions regarding fare increases. The net increase in ridership to the UTA system due to the projects proposed in the Regional Transportation Plan is estimated to be 114,000 each weekday in 2040. In terms of fare increases, UTA projects that it will need to increase fares by around 50 percent in the first phase of plan implementation in order to keep up with inflation and to achieve its goal of getting thirty percent of operating costs from fares. UTA will need to raise fares around 30 percent in the second and third phases in order to keep up with inflation. In total it is forecasted that the fares from people using projects to be constructed over the life the RTP will net \$1.1 billion through 2040. Fare revenues from the RTP project are anticipated to make up about 8 percent of all RTP revenues.



Local Sales Tax Revenue

A portion of local sales tax revenues is used to support transit services. With the dramatic success of the Sandy and the University TRAX lines, pressure from the general public, business, and policy makers has increased to make more serious strides in building a robust transit system. Many community leaders have embraced transit for their communities and have passed resolutions in favor of an additional tax increases to support transit. The amount of funding available for the new projects in the RTP depends upon the sales tax rate applied and the growth in taxable sales.

In November 2000, residents in Salt Lake, Weber, and Davis Counties voted to raise their local option transportation sales tax rate from 0.25 to 0.50 cent. In 2006, Salt Lake County and in 2007 Weber County again raised their local option transportation related sales tax rate to 0.75 cent with 0.62 in Salt Lake County dedicated to transit and an undetermined amount in Weber County dedicated to transit. The 2007 State Legislature removed local option sales tax from food. However, to offset reductions in transit revenue, the Legislature increased the transit dedicated local option sales tax rate on non-food items by 0.05 in Weber and Davis Counties and 0.0625 in Salt Lake County. Although the Davis County referendum did not pass in 2007 discussions are beginning

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regarding another attempt at a transportation dedicated 0.25 percent local option sales tax ballot measure in 2012. The RTP assumes that half the Weber County local option revenues approved in 2007 will go to transit; that Davis County will approve the 0.25 percent local option in 2012 with half going to transit; and that all three counties will obtain permission from the State Legislature and win voter approval to bring the transportation dedicated local option sales tax up to 1.25 percent. This would increase the transit dedicated portion by 0.3125 to 0.325 percent to a full one percent in 2017. No other local option revenue dedications are anticipated through 2040. The local option sales tax rates assumed to be dedicated to transit are shown in Table 6-2, entitled “Local Option Sales Tax – Split by Mode.”

Growth in taxable sales is generally a function of population growth, inflation, and growth in real income. From 1978 through 2009 (31 years) the average annual growth in taxable sales in the three counties was 5.9 percent. In the 20 years prior to 2009 the growth rate was 5.8 percent and in the 10 years prior to 2009 the growth rate was 3.2 percent. However, since 2008 when the Great Recession began to 2010 which is the base year for the Regional Transportation Plan sales tax revenues in the WFRC Region have declined by a UTA estimated 10.4 percent. The plan assumes that the growth rate will start off slowly with a 2.88 percent increase in 2011, a 4.14 percent increase in 2012, and other gradual increases until 2016 when it is assumed to plateau at 5.25 percent through 2040. The total sales tax revenue derived from the existing sales tax levels through 2040 is projected to be \$10,100,000,000. Future receipts from the increased sales tax rates are projected to be \$4,900,000,000 by 2040 (34 percent of all RTP revenue).

Federally Discretionary Transit Funds

Discretionary federal funds are competed for on a nationwide basis. These funding programs, financed through the federal gasoline tax as well as the federal general fund, are made available through the Federal Transit Administration (FTA). New Starts is the primary discretionary federal funding source for new projects. Recently FTA has sectioned out a subsection of New Starts, called Small Starts, which is dedicated for small, new projects. This application and selection process is expedited. Other discretionary and non-discretionary federal funding sources are more oriented to

maintenance of the existing system and are briefly discussed in the “other funds” portion of the financial chapter.

The New Starts Program provides funds for construction of new fixed guideway systems or extensions to existing fixed guideway systems. The Small Starts Program provides funds to capital projects that either: (a) meet the definition of a fixed guideway for at least 50 percent of the project length in the peak travel period or, (b) are corridor-based bus projects with 10 minute peak/15 minute off-peak headways or better while operating at least 14 hours per weekday. Federal assistance provided under Section 5309(e) must be less than \$75 million and the project must have a total capital cost of less than \$250 million, both in “year of expenditure” dollars.

The FTA is guided in the selection of projects by a rigorous planning process and a set of selection criteria. All projects to be nominated for New Starts must undergo a four step preparation process. First, it must be approved as an element of the Regional Transportation Plan. The RTP will have identified general corridors for future major transit investments and generally described cost, alignment, and design of the project. Next, it must be the subject of a FTA certified Alternatives Analysis process. The Alternatives Analysis examines all of the different project options within a given corridor and allows decision makers to reach consensus on the best option. Third, the project must go through preliminary engineering and one of several levels of environmental study. The level of study required depends upon potential environmental impacts or level of controversy. Last, the project is the subject of final design. After these steps are taken, the sponsoring entity may submit a formal request for funding.

After completion of the Alternatives Analysis, the FTA decides whether or not the project is ready to enter each of the next project steps. FTA also reviews and rates the project according to criteria established in federal law. Criteria include cost effectiveness, land use policies, anticipated economic development impacts, environmental benefits, mobility improvements, and operating efficiencies. The project must be rated “medium” or higher by the FTA in order to move to the next stage of project development. Typically, congressional authorizes about \$1.5 billion each budget year for the New Starts Program. Historically the New Starts program has been fully earmarked. Small Starts received its

first allocation in 2007 and has received \$200 million each year. The current maximum FTA participation in a project is 60 percent, although 50 percent is much more common. The Regional Transportation Plan anticipates the receipt of 25 percent of the capital costs of all 2011-2040 New Start and Small Start eligible projects. This equates to \$1.9 billion over the course of 30 years.

Project Construction bonds

UTA has the authority to bond, provided that its total anticipated net revenues available for debt service and capital purchases exceed the bond payments by at least 14.5 percent. Additionally, UTA requires that its debt load not exceed three percent of its total asset value. Bonding is an attractive option for the Wasatch Region as it allows projects to be constructed earlier than they could otherwise be constructed. During inflationary times, bonding can make a project less expensive to build. The cost of bonding is dependent upon how attractive a bond offer is to investors. The municipal bond market traditionally offers low risk, tax free income to investors. UTA has received excellent bond ratings in the past and has been able to obtain favorable interest rates for its bonds issues.

The 2040 RTP assumes that UTA will bond for a total of \$2.7 billion over the course of the Plan. The assumed interest rate for this bonding is 5 percent and interest payments amount to \$789 million. Since some of the existing bonds from the 2015 program extend beyond 2040 and because it is assumed that \$2.5 billion in 15 year bonds will be issued to construct the third phase of the Regional Transportation Plan, it is anticipated that in 2040, there will be an outstanding balance of \$2.3 billion. Bond revenue will provide 20 percent of fully implementing the cost restrained portion of the Regional Transportation Plan.

Fares

The UTA receives additional revenue through user fees from the daily operation of its bus and rail system. The total revenues it receives are based upon the average fare per boarding and the number of boardings per year. In 2010 UTA estimated that it received an average of \$0.92 per boarding and 37,770,000 boardings resulting in \$34,883,000 in fare revenues from its services across its entire region. Between 1996 and 2009, the average fare per boarding increased by an average of 5.8 percent per year and its ridership increased by an average

four percent per year giving it average farebox revenue of \$20,000,000 and an average annual farebox revenue growth of 10.1 percent. Between 2011 and 2040 UTA anticipates increasing its average fare per boarding by an average of 3.6 percent per year. It anticipates total ridership on its existing and committed system will increase by 3.4 percent per year for a total annual growth in fare revenues of 7.0 percent on its existing and committed system. Most of this funding is allocated to the operations and maintenance of the existing and committed system.

Fare revenues that could be used for the RTP projects are the net revenues anticipated from new and future patrons. A conservative approach to estimating fare revenues was taken using the WFRC travel model, UTA ridership elasticity values, and UTA assumptions regarding fare increases. The travel model estimates that if all the projects were built in the first phase, about 113,000 people would ride them on an average weekday. By 2040 forecasted demographic factors would increase average daily ridership system-wide by 46 percent. UTA assumes that about 25 percent of these riders would be patrons moving from one UTA type of service to another and would not increase fare revenues. UTA only counts weekday ridership in its farebox revenue estimates. In terms of fare increases, UTA assumes that it will need to increase fares by around 50 percent in the first phase in order to keep up with inflation and achieve its goal of getting thirty percent of operating costs from fares. It will need to raise the fares by around 30 percent in the second and third phases in order to keep up with inflation. It is assumed these fare increases will reduce the 2040 ridership growth rate from 45 percent to 35 percent. In total, it is forecasted that fare revenue from patrons of the RTP projects will net \$1.1 billion over the course of the RTP.

Other Revenues

UTA derives additional revenue from a myriad of relatively small sources and from sources that are dedicated to the preservation of the existing transit system. Other Federal sources include Section 5309 Discretionary Bus and Bus Facilities Grants which are allocated for specific projects on the basis of merit. Section 5307 Formula Grants are distributed annually to the Ogden-Layton Urbanized Area, the Salt Lake Urbanized Area, and to the Region in support of Commuter Rail. The formula used to distribute these funds

TABLE 6-4
Projected Transit Capital and Operating Revenues 2011 - 2040

| Revenues | 2011-2020 | 2021-2030 | 2031-2040 | Total |
|---|-----------------------|-------------------------|-------------------------|--------------------------|
| Balance from existing revenues | \$ - | \$ 270,000,000 | \$ 1,657,000,000 | \$ 1,927,000,000 |
| Sales tax rate increases | \$ 480,000,000 | \$ 1,639,000,000 | \$ 2,734,000,000 | \$ 4,853,000,000 |
| Federal New, Small, & Very Small Starts | \$ 107,000,000 | \$ 567,000,000 | \$ 1,215,000,000 | \$ 1,889,000,000 |
| New Project Fares | \$ 46,000,000 | \$ 348,000,000 | \$ 681,000,000 | \$ 1,075,000,000 |
| New Bonds | \$ - | \$ 240,000,000 | \$ 2,500,000,000 | \$ 2,740,000,000 |
| TOTAL TRANSIT REVENUES | | | | |
| | \$ 633,000,000 | \$ 3,064,000,000 | \$ 8,787,000,000 | \$ 12,484,000,000 |

is based on total population, population density, bus, and rail transit revenue miles of service. The 5309 Fixed Guideway Modernization Program is another important source of funding for maintenance. Each project becomes eligible for this funding after seven years in service. Congestion Management/Air Quality and the Surface Transportation Program grants administered by the WFRC and still other smaller grants are available for various purposes. Non-federal sources include interest from bank accounts, bus advertising, local contributions, and “joint development”. All of these revenues are accounted for in the 10 to 20 percent of RTP total funding discussed at the beginning of this section. Table 6-4 summarizes the funds that will pay for the RTP’s recommended transit improvements through 2040.

PROJECTED COSTS OVERVIEW

The costs for making the needed improvements for both highways and transit as identified by the 2040 RTP were analyzed by the WFRC, UDOT, UTA and the other local MPOs. Costs include those required to meet the needs identified in the Plan, as well as cost estimates for general administration and the operation, maintenance, and preservation of the existing transportation system. Projected costs for highway improvements have been adjusted at an annual four percent inflation rate, while the projected costs for transit operations and maintenance have been adjusted at an annual 3.75 percent until 2017 and then at a 3.5 percent rate after 2013.

HIGHWAY COST ESTIMATES

For purposes of this Plan, the Utah Department of Transportation has estimated its current funding levels to operate, maintain, preserve, and administer the state highway system. In addition, through their Asset Management Program, UDOT has estimated the additional revenues, beyond the current levels, needed to maintain its system. Unmet funding levels were estimated for safety, bridge preservation, and pavement preservation. UDOT assumes that future construction projects will include some system maintenance and preservation.

UDOT Operations

The Utah Department of Transportation operation costs include UDOT staff, planning and preliminary engineering, maintenance, snow plowing, and other potential cost centers. UDOT estimated their administrative costs based on past budgets. In 2009, UDOT’s budget for Operations was approximately \$203,000,000 statewide. The operations costs are expected to grow at two percent per year. A total of \$8,574,000,000 has been estimated for UDOT operations expenses through the year 2040 statewide.

Contractual Maintenance

“Contractual maintenance” costs are the costs associated with short season maintenance projects that are contracted out. These include such activities as: slurry seals, chip seals, and striping. UDOT estimated its contractual maintenance

costs based on past budgets. In 2005, UDOT's budget for contractual maintenance was \$45,000,000 statewide. These costs are projected to grow at five percent per year, including four percent for construction inflation and one percent for growth in the roadway system. A total of \$4,007,000,000 has been estimated for UDOT's contractual maintenance costs through the year 2040 statewide.

Signals, Spot Improvements, Lighting, and Barriers

Signals, spot improvements, lighting, and barriers activities include signing, marking, and signal installation and maintenance. UDOT's signal, spot improvement, lighting and barriers costs for 2006 were \$12,500,000 statewide. These costs are projected to grow at five percent per year, including four percent for construction inflation and one percent for growth in the roadway system. Based on these assumptions, UDOT will allocate \$1,060,000,000 for signals, spot improvements, lighting and barriers between 2011 and 2040 statewide.

Bridge Preventative Maintenance

UDOT estimated its statewide costs for bridge preventative maintenance activities in 2005 totaled \$10,000,000. These costs are projected to grow at five percent per year, including four percent for construction inflation and one percent for growth in the roadway system. Based on UDOT assumptions, about \$848,000,000 will be set aside for bridge preservation for the years 2011 through 2040 statewide.

Bridge Rehabilitation / Replacement

UDOT estimated its bridge rehabilitation and replacement costs for 2011 through 2040 based on the \$10,500,000 budgeted for this activity statewide in 2005. These costs are projected to grow at five percent per year, including four percent for construction inflation and one percent for growth in the roadway system. Based on UDOT assumptions, \$935,000,000 will be used for bridge rehabilitation and replacement for the years 2011 through 2040 statewide.

Highway Rehabilitation / Replacement

UDOT estimated highway rehabilitation and replacement costs for 2011 through the year 2040, based on the 2006 budget, of \$16,000,000 statewide. These costs are projected to grow at five percent per year, including four percent for construction inflation and one percent for growth in the roadway system. Based on UDOT assumptions, \$1,357,000,000 will be used for highway rehabilitation and replacement for the years 2011 through 2040 statewide.

Hazard Elimination, Safety, Enhancements

"Hazard elimination, safety, and enhancements" include hazard elimination, intersection upgrades, railroad crossing improvements, other similar projects; and the development of pedestrian facilities, bicycle facilities, and landscaping projects. UDOT estimated their statewide costs for these activities in 2005 at \$12,000,000. These costs are projected to grow at five percent per year, including four percent for construction inflation and one percent for growth in the roadway system. Based on UDOT assumptions, it will spend \$1,068,000,000 for hazard elimination, safety and enhancement expenses between 2011 and 2040 statewide.

Region / Department Contingencies

UDOT Region and Department contingencies are used for project overruns, spot improvements and other immediate



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but unanticipated needs. UDOT estimated their statewide costs for these activities in 2005 at \$3,500,000. These costs are projected to grow at five percent per year, including four percent for construction inflation and one percent for growth in the roadway system. Based on UDOT assumptions, it will make \$312,000,000 available for region and department contingency expenses between 2011 and 2040 statewide.

Unmet Safety Needs

UDOT estimated the amount of funds currently allocated to safety, as noted above. Through the Asset Management Program, UDOT has estimated a shortfall in needed safety funding. UDOT estimates that there was a shortfall of safety funding in 2006 of approximately \$7,400,000. These costs are projected to grow at five percent per year, including four percent for construction inflation and one percent for growth in the roadway system. UDOT estimates that between 2011 and 2040 an additional \$627,000,000 in safety funding will be needed statewide.

Unmet Bridge Preservation Needs

UDOT estimated the amount of funds currently allocated to bridge preservation as noted above. Through the Asset

Management Program, UDOT has estimated a shortfall in bridge preservation funds. UDOT estimates that there was a shortfall of bridge preservation funding in 2006 of \$33,475,000. The costs are projected to grow at five percent per year, including four percent for construction inflation and one percent for growth in the roadway system. UDOT estimates that between 2011 and 2040, the additional bridge preservation fund will need a total \$2,839,000,000 statewide.

Unmet Pavement Preservation Needs

UDOT estimated the amount of funds currently allocated through the asset management program to pavement preservation listed above. In 2006, UDOT estimated that there was a shortfall of pavement preservation funding of \$64,075,000. These costs are projected to grow at five percent per year, including four percent for construction inflation and one percent for growth in the roadway system. UDOT estimates that between 2011 and 2040 the additional pavement preservation fund will need a total of \$5,433,000,000 statewide. Table 6-5 summarizes the projected state highway costs for 2011 through 2040 for each of the eleven expenditure categories.

TABLE 6-5

Projected Statewide Highway Operating and Preservation Costs 2011 - 2040

| Expenditures | Amount |
|---|--------------------------|
| UDOT Operations | \$ 8,574,000,000 |
| Contractual Maintenance | \$ 4,007,000,000 |
| Signals, Spot Improvements, Lighting, Barrier | \$ 1,060,000,000 |
| Bridge Preventive Maintenance | \$ 848,000,000 |
| Bridge Rehabilitation / Replacement | \$ 935,000,000 |
| Highway Rehabilitation / Replacement | \$ 1,357,000,000 |
| Hazard Elimination, Safety, Enhancements | \$ 1,068,000,000 |
| Region / Department Contingencies | \$ 312,000,000 |
| Unmet Safety Needs | \$ 627,000,000 |
| Unmet Bridge Preservation Needs | \$ 2,839,000,000 |
| Unmet Pavement Preservation Needs | \$ 5,433,000,000 |
| TOTAL STATEWIDE HIGHWAY OPERATING AND PRESERVATION COSTS | \$ 27,060,000,000 |

Local Highway Cost Estimates

Estimates were made for six local cost categories. Estimates included administration, maintenance, pavement preservation, traffic operations and safety, and enhancements. The total estimated for the various types of costs are discussed below. These assumptions are based on a survey of local agency highway expenses. Growth and inflation assumptions were applied to these cost totals for the period from 2011 through 2040.

Administration

Administration costs are expenditures associated with managing transportation agencies, and the transportation divisions of larger public works departments. These costs include expenditures for staff, planning activities, preliminary engineering, etc. Municipalities and counties along the Wasatch Front are estimated to spend 15 percent of their transportation revenues on administration. It is estimated that approximately \$1,427,000,000 will be used for administration purposes as defined above through the year 2040.

Maintenance

Maintenance activities include snow removal, sweeping, weed control, crack sealing and pothole repair. Estimates of local spending for maintenance are based on municipal and county financial reports. In 2001, local maintenance costs were estimated to be approximately \$1,500 per lane-mile. These costs were estimated to have increased by four percent per year, while the number of lane-miles is estimated to have increased

by one percent annually. Municipalities and counties in the Wasatch Front Region were responsible for approximately 8,875 lane-miles in 2001. It is estimated that approximately \$1,690,000,000 will be used for local maintenance activities through 2040.

Pavement Preservation

Pavement preservation actions are treatments for streets and highways, which are more extensive than maintenance. These treatments range from chip seal work to full reconstruction. Local pavement preservation costs were calculated, based on experience, from municipal and county financial reports. In 2001 local agency costs for pavement preservation were estimated, on average, at about \$4,100 per lane-mile per year for collector, arterial and local streets. These costs were estimated to have increased by four percent a year. The Wasatch Front Urban Area had 8,875 lane-miles of collector, arterial and local streets in 2001. The number of lane-miles was assumed to grow at one percent a year. It is estimated that a total of \$4,566,000,000 will be used by local governments for local pavement preservation through 2040.

Traffic Operations and Safety

Traffic operations activity includes signing, marking, and signal installation and maintenance. Safety improvements include hazard elimination, intersection upgrades, railroad crossing improvements, and similar projects. In 2001, local agency costs for traffic operations and safety were estimated, on average, to be about \$2,100 per lane-mile per year for

TABLE 6-6
Projected Local Highway Operating and Preservation Costs 2011 - 2040

| Expenditures | Amount |
|----------------------------------|--------------------------|
| Administration | \$ 1,427,000,000 |
| Maintenance | \$ 1,690,000,000 |
| Pavement Preservation | \$ 4,566,000,000 |
| Traffic Operations and Safety | \$ 2,292,000,000 |
| Enhancements | \$ 456,000,000 |
| TOTAL LOCAL HIGHWAY COSTS | \$ 10,431,000,000 |

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collector, arterial and local streets. These costs were estimated to have increased by four percent a year, while the number of lane-miles was estimated to increase by one percent annually. In 2001, municipalities and counties along the Wasatch Front were responsible for approximately 8,875 lane-miles. It is estimated that a total of \$2,292,000,000 will be used for local traffic operations and safety costs through 2040.

Enhancements

Enhancements include development of pedestrian facilities, bicycle facilities, and landscaping projects. In 2001, local enhancement costs were estimated to be approximately \$400 per lane-mile. These costs were estimated to have increased by four percent a year, while the number of lane-miles is estimated to increase by one percent annually. In 2001, municipalities and counties along the Wasatch Front were responsible for approximately 8,875 lane-miles. It is estimated that a total of \$456,000,000 will be spent for local enhancement costs through the year 2040. Table 6-6 summarizes the projected local highway costs for 2011 through 2040 for each of the five expenditure categories discussed above.

TRANSIT COST ESTIMATES

The UTA maintains a master financial spreadsheet which it uses for annual budget preparation, to demonstrate its financial capacity to Federal officials for New Starts Projects, and to prove its credit worthiness to bond rating agencies. This spreadsheet was expanded and used in tracking revenue and costs for the 2011-2040 Regional Transportation Plan. Given that Utah Transit Authority operates and maintains a substantial transit system and is now undergoing an extensive expansion of its rail system with its existing revenue sources, the focus of this document will only be RTP related costs. These costs can be directly compared to the new revenues discussed in the Revenues section. UTA's Transit Development Program discusses the revenues and cost associated with the current and committed transit system.

Costs were estimated for transit related projects in the 2011-2040 Regional Transportation Plan including new construction, operations and maintenance, maintenance facilities, and debt service. The WFRC worked with UTA to estimate capital as well as operating and maintenance costs to implement the 2040 RTP's recommended transit improvements. Recommended

major investment costs include commuter rail, light rail transit, streetcar, Bus Rapid Transit (BRT 3), Enhanced Bus (BRT 1) lines. Built into the costs for each new service are the proportional costs of the required maintenance facility. Other RTP capital investments include the purchase of replacement BRT and rail vehicles and the construction of transit hubs, transit ramps, and park and ride facilities. Project costs were derived from study estimates where possible but were otherwise estimated on a per unit basis if a study had not been completed. The cost estimation methodology is discussed below.

All direct project costs are discussed below in 2010 dollars. Bonding costs and the costs summary below are in year of expenditure dollars. The annual inflation rate assumed for RTP projects was 4 percent for capital costs and 3.75 percent for Operating and Maintenance costs. Project by project costs are found in Appendix I.

Direct Project Costs

Right-of-Way

Right-of-way costs were estimated using two generally accepted general methods of calculation. The first method is to use a simple \$1.0 million per mile charge where an existing rail corridor is involved or a \$0.15 million per mile charge when the line is traversing a large development with a partner developer. A second method is used when widening a street to make way for a transit project. This method uses estimated current curb to curb and building front to building front distances, estimated future road rights-of-way widths, and predominant land use type to calculate right-of-way and building acquisition costs by project segment. Only a 30 foot wide transit way is assumed where a continuous exclusive lane is required, unless specific studies have given more direction. Per square foot costs are assumed to be \$18 for commercial areas, \$12 for mixed residential/commercial and for industrial areas, and \$9 for residential areas. Buildings are assumed to be required if the full width road plus transitway width would exceed the building face to building face width by twelve or more feet. Otherwise it is assumed that adjustments to the street or the transit project could eliminate the need to take the building. Building costs were estimated at \$10 million a centerline mile for commercial areas, \$7.5 million per centerline mile for industrial or mixed residential/commercial areas, and \$5 million per mile for residential areas.



Commuter Rail

Typical Commuter Rail capital costs are estimated by UTA to be \$17.7 million a mile. A break out of each of the unit costs is provided in Appendix I. Because only one Commuter Rail construction project is planned for in the RTP and because it is a rebuild project, the only non-right-of-way costs calculated for this project were utilities, structures, design/management/bonds, and contingency/escalation. Therefore, construction costs were estimated at \$9.2 million per mile. The typical right-of-way cost for this type of facility is \$1.0 million a mile. In total, the project cost was \$and estimated 62.8 million at \$10.2 per mile. Operating costs were estimated at \$2.6 million per year for the 2.1 mile project.

Light Rail

Typical Light rail capital costs are estimated to be \$52.8 million a mile. A break out of each of the unit costs is provided in Appendix I. Only three light rail transit projects are proposed in the RTP and two different approaches to construction cost were used to develop the cost estimates. The first two projects are the Draper Line TRAX Extension North and South segments. The vast majority of the Draper Line TRAX Extension has undergone preliminary engineering and this figure was used directly for the segments south to 14600 South. The per-mile figure from the studied Draper Line TRAX Extension was then used to estimate the cost of the segment

south of 14600 South. The third segment is the University TRAX Line to Salt Lake Central TRAX Connection. The typical cost figure of \$52.8 million mile plus the cost of right-of-way was used to calculate the cost of the one mile segment between 400 South/Main Street and Salt Lake Central. Operating and Maintenance costs for light rail are calculated as \$112,449 per track mile plus \$78.93 per Revenue Hour plus \$2.94 per vehicle mile. Three vehicles per train were assumed.

Streetcar

Typical capital cost for Streetcar lines are estimated to be \$37.94 million a mile. A more detailed explanation of each of the unit costs is provided in Appendix I. Only four streetcar transit projects are proposed

in the RTP, and two different approaches to construction cost were used to develop the cost estimations. The Sugarhouse Streetcar (First Phase) and Ogden-Weber State University Streetcar lines have undergone studies and the cost estimations in the studies were used for these projects. The Ogden Downtown Streetcar Circulator and Sugarhouse Streetcar Westminster Segment lines used the \$37.94 million per mile charge and no right-of-way costs were assumed. Operating and Maintenance costs for streetcar are the same as light rail (\$112,449 per track mile plus \$78.93 per Revenue Hour plus \$2.94 per vehicle mile). However, one car trains were assumed.

Bus Rapid Transit (BRT 3) and Enhanced Bus (BRT 1)

Typical Bus Rapid Transit (BRT 3) and Enhanced Bus (BRT 1) capital costs are estimated to be \$16.4 million and \$3.4 million per mile respectively. A break out of each of the unit capital costs is provided in Table 6-7. The per-unit capital costs for these two transit types are very similar with the exception of exclusive lanes. Adjustments were made to these per-unit costs for some common project circumstances such as: Bus Rapid Transit (BRT 3) projects built in conjunction with major road projects were assumed to have half the lane construction costs and Enhanced Bus (BRT 1) built in conjunction with major road projects were assumed to have none of the traffic signal priority improvement costs and only half of the queue jumper costs.

TABLE 6-7

Bus Rapid Transit Summary

| | Base | Bus Rapid Transit (BRTIII) | | Enhance Bus (BRTI) | |
|---------------------------------|---------------|----------------------------|---------------|--------------------|--------------|
| | | Qty / Mile | Cost / Mile | Qty / Mile | Cost / Mile |
| Stations | \$ 400,000 | 2.00 | \$ 800,000 | 2.00 | \$ 800,000 |
| Parking Lots | \$ 1,800,000 | 0 | \$ 0 | 0 | \$ 0 |
| Vehicles | \$ 1,000,000 | 0.54 | \$ 540,000 | 0.54 | \$ 540,000 |
| Transit System Priority | \$ 200,000 | 4.00 | \$ 800,000 | 4.00 | \$ 800,000 |
| Queue Jump | \$ 150,000 | 2.00 | \$ 300,000 | 2.00 | \$ 300,000 |
| Lane Construction | \$ 10,000,000 | 1.00 | \$ 10,000,000 | 0 | \$ 0 |
| Maintenance Facility | \$ 250,000 | 0.54 | \$ 135,000 | 0.54 | \$ 135,000 |
| Subtotal | | | \$ 12,575,000 | | \$ 2,575,000 |
| Contingency | 30% | | \$ 3,772,500 | 30% | \$ 772,500 |
| Summary Cost Per Mile (rounded) | | | \$ 16,348,000 | | \$ 3,348,000 |

Operating and Maintenance costs for Enhanced Bus (BRT 1) and Bus Rapid Transit (BRT 3) were estimated using \$1.95 per vehicle mile and \$50 per vehicle hour, the same as a local bus. The BRT lines are designed to replace the existing local service with half mile station spacing and so only the net operating costs were charged against these projects.

Other Capital Costs

The 2011-2040 Regional Transportation Plan also call for several small projects and eventually the replacement of the Bus Rapid Transit (BRT 3) and Enhanced Bus (BRT 1) vehicles that were purchased for the projects in the first phase of the Plan. The small projects called for are three park and

TABLE 6-8

Projected Major Transit Capital and Operating Costs 2011 – 2040 **

| Expenditures | 2011-2020 | 2021-2030 | 2031-2040 | Total |
|--|-----------------------|-------------------------|-------------------------|--------------------------|
| Construction | \$ 466,000,000 | \$ 2,312,000,000 | \$ 5,905,000,000 | \$ 8,683,000,000 |
| Operations and Maintenance | \$ 74,000,000 | \$ 585,000,000 | \$ 1,504,000,000 | \$ 2,163,000,000 |
| Debt Service | \$ - | \$ 38,000,000 | \$ 751,000,000 | \$ 789,000,000 |
| TOTAL MAJOR COSTS | | | | |
| | \$ 540,000,000 | \$ 2,935,000,000 | \$ 8,160,000,000 | \$ 11,635,000,000 |
| *Includes debt service through 2040 | | | | |
| *Excludes non-RTP expenditures and 'other' small RTP capital purchases | | | | |
| **\$2,306,000,000 in debt still outstanding at the end of 2040 | | | | |

ride lots that are not associated with a RTP transit line, a transit only freeway ramp, and four transit hubs. The unit costs for these three facility types are \$2.0 million, \$20 million, and \$2.0 million respectively in 2010 dollars. The cost of a Bus Rapid Transit (BRT 3) and Enhanced Bus (BRT 1) vehicle are \$1.0 million and \$0.54 million respectively in 2010 dollars. Projects that start in the first phase as Enhanced Bus (BRT 1) but are scheduled to become BRT 3 would receive specialized Bus Rapid Transit (BRT 3) replacement vehicles. It is estimated that about 70 Bus Rapid Transit (BRT 3) and 30 Enhanced Bus (BRT 1) replacement vehicles will be required.

Bonding Costs

The 2040 RTP recommends an aggressive project schedule which, in turn, requires incurring debt and debt payments. The financial assumptions include the repayment of most bonded debt by 2040 and the remainder of it by 2050. The debt service for the RTP in each phase is anticipated to be as follows: Nothing in the first phase, \$38 million in the second phase, and \$751 million in the third phase for a total of \$789 million in year of payment dollars. An additional \$2,306 million in debt is outstanding at the end of 2040 and interest payments after 2040 will amount to \$759 million.

Cost Summary

The Utah Transit Authority operates a large transit system

of carpools, vanpools, regular buses, Enhanced Bus (BRT 1), Bus Rapid Transit (BRT 3), Light rail, and Commuter Rail. This system incurs many regular and on-going costs. The UTA will significantly expand the Region's rail facilities and service in the next few years. The Transit Development Program tracks the transit system costs and revenues. For the 2011-2040 Regional Transportation Plan, the costs associated with the RTP proposed projects are summarized in Table 6-8.

Conclusion

Statewide funding available to UDOT for capacity improvement projects is assumed to be divided among the MPOs of the state based on each organization's share of the state's populations. The 2040 RTP assumes that Wasatch Front Regional Council will receive 54.3 percent of the available funding available between 2011 and 2020, 51.1 percent of the available funding between 2021 and 2030, and 48.5 percent of the available funding between 2031 and 2040. The assumption is that approximately \$15,923,000,000 of the \$31,929,000,000 total new capacity funds available to UDOT over the life of the RTP will be used in the Wasatch Front Region. The region also will receive approximately \$325,000,000 for Transportation Investment Fund (TIF) / Centennial Highway Fund (CHF) projects between 2011 and 2013, \$244,000,000 for Centennial Highway Needs Fund (CHNF) projects for 2011 and 2012, and about \$27,000,000 from the Highway Capacity Program

TABLE 6-9

Statewide, Regional, and Local Highway Revenue Allocation 2011 - 2040

| Source / Expenditure | Amount |
|---|--------------------------|
| WFRC's Available Funds for Capacity Improvements from State Funds | \$ 16,518,000,000 |
| Regional Revenue Available | \$ 6,035,000,000 |
| Local Revenue Available | \$ 9,511,000,000 |
| Local Highway Operating Costs | (\$ 10,430,000,000) |
| WFRC's Available Funds for Capacity Improvements from Local Funds | (\$ 920,000,000) |
| WFRC Bond Interest and Costs | (\$ 1,456,000,000) |
| TOTAL WFRC AVAILABLE FUNDS FOR CAPACITY IMPROVEMENTS | \$ 20,177,000,000 |
| TOTAL WFRC HIGHWAY PROJECT COSTS 2011-2040 | \$ 20,065,000,000 |
| WFRC UNMET PRESERVATION NEEDS | \$ 4,485,000,000 |

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(HCP) and TIF\$55 program available for 2011 and 2012. This brings the total amount available to program for capacity projects from UDOT to approximately \$16,518,000,000. The WFRC also estimates that approximately \$6,035,000,000 will be available from regional revenue sources. The Wasatch Front Regional Council's total resources available for capacity improvement projects are anticipated to be approximately \$20,177,000,000.

The WFRC assumes a bond offer for highways projects totaling approximately \$1,639,000,000 will be made available in 2017, and another bond offer in 2025 for \$865,000,000. These bonding assumptions, if they become a reality, still leave the state with remaining bonding capacity. These bonds will allow additional projects to be constructed in Phases 1 and 2. However, interest payments will reduce total available funding in later phases. It should be noted that other MPOs within the State have been included in discussions regarding proposed bonding to ensure adequate coordination. If bonding is implemented as discussed above, the total cost will be \$1,456,000,000.

For the highway portion of the 2040 RTP, cost estimates were calculated for new capacity improvements on collector and arterial streets needed to meet future transportation demands. These costs for the Wasatch Front Urban areas

are approximately \$20,065,000,000. The cost for local street construction is not included in these estimates. It is assumed that private developers will construct these streets.

UDOT's statewide Unmet Preservation (Safety, Bridge, and Pavement) Needs is assumed to be divided among the MPOs based on each agency's share of the state's populations. The Wasatch Front Regions share of the costs is approximately \$4,485,000,000 of the total of \$8,899,000,000. Table 6-9 shows projected revenues for highways, both statewide and regional; the costs required to administer, operate, and preserve the system; the funding available for adding capacity; and the projected cost of the RTP recommended projects.

The proposed 2011-2040 Regional Transportation Plan transit program is fiscally constrained. The existing revenue streams as outlined in UTA's Transit Development Program can construct, operate, and maintain the existing and committed transit system and contribute a limited amount of funds to the RTP program. The bulk of new projects will need to be funded through new revenue sources. The 2011-2040 RTP makes reasonable assumptions about what these new revenue sources might be, and the revenues they would produce. It also makes reasonable estimations about what the 2011-2040 RTP program of projects would cost. Table 6-10 shows projected revenues and cost estimations for the 2040 RTP.

TABLE 6-10

Total Major Projected Transit Revenues and Costs 2011 - 2040

| Expenditures | 2011-2020 | 2021-2030 | 2031-2040 | Total |
|--|----------------|------------------|------------------|-------------------|
| Total RTP Revenues | \$ 633,000,000 | \$ 3,064,000,000 | \$ 8,787,000,000 | \$ 12,484,000,000 |
| Total RTP Costs | \$ 540,000,000 | \$ 2,935,000,000 | \$ 8,160,000,000 | \$ 11,635,000,000 |
| *Includes debt service through 2040 | | | | |
| *Excludes non-RTP expenditures and 'other' small RTP capital purchases | | | | |
| **\$2,306,000,000 in debt still outstanding at the end of 2040 | | | | |

