IMPACT FEE FACILITIES PLAN

Prepared for

West Jordan City, Utah

September 26, 2016

TischlerBise
FISCAL | ECONOMIC | PLANNING

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TischlerBise, Inc., certifies that the attached Impact Fee Facilities Plan:

1. includes only the costs of public facilities that are:
    a. allowed under the Impact Fees Act; and
    b. actually incurred; or
    c. projected to be incurred or encumbered within six years after the day on which each impact fee is paid;
2. does not include:
    a. costs of operation and maintenance of public facilities;
    b. costs for qualifying public facilities that will raise the level of service for the facilities, through impact fees, above the level of service that is supported by existing residents;
    c. an expense for overhead, unless the expense is calculated pursuant to a methodology that is consistent with generally accepted cost accounting practices and the methodological standards set forth by the federal Office of Management and Budget for federal grant reimbursement; and
3. complies in each and every relevant respect with the Impact Fees Act.

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Overview

The City of West Jordan, Utah, has retained TischlerBise to determine growth-related infrastructure needs and calculate impact fees for the following infrastructure categories:

- Parks
- Fire
- Police
- Water
- Wastewater
- Storm Drainage
- Transportation

This Impact Fee Facility Plan (IFFP) is a companion document to the City's Impact Fee Study, prepared for West Jordan City, Utah. Whereas the Impact Fee Study presents the technical analysis, assumptions and impact fee methodology, this Impact Fee Facilities Plan summarizes:

- Demands placed upon existing public facilities by new development;
- The proposed means by which the City will meet these demands; and
- Funding source and cash flow analysis.

Impact fees are one-time payments used to construct system improvements needed to accommodate new development. An impact fee represents new growth's fair share of capital facility needs. By law, impact fees can only be used for *capital* improvements, not operating or maintenance costs. Impact fees are subject to legal standards, which require fulfillment of three key elements: need, benefit and proportionality. First, to justify a fee for public facilities, it must be demonstrated that new development will create a **need** for capital improvements. Second, new development must derive a **benefit** from the payment of the fees (i.e., in the form of public facilities constructed within a reasonable timeframe). Third, the fee paid by a particular type of development should not exceed its **proportionate** share of the capital cost for system improvements.

EVALUATION OF OTHER REVENUE SOURCES

The IFFP must also include a consideration of all revenue sources, including impact fees and the dedication of system improvements, which may be used to finance system improvements. In conjunction with this IFFP, there must be a determination that impact fees are necessary to achieve an equitable allocation of the costs of the new facilities between the new and existing users.

In considering the funding of future facilities, the City has determined the portion of future projects that will be funded by impact fees as growth-related, system improvements. Other revenues such as utility rate revenues, property taxes, sales tax revenues, grants, or loans can be used to fund these types of expenditures, as described below.

Utility Rate Revenues: Utility rate revenues serve as the primary funding mechanism within enterprise funds. Rates are established to ensure appropriate coverage of all operations and maintenance expenses, debt service coverage, and capital project needs. Impact fee revenues are considered non-operating revenues and help offset future capital costs.

Property Tax Revenues: Property tax revenues are not specifically identified in this analysis as a funding source for growth-related capital projects, but inter-fund loans can be made from the general fund which would ultimately include some property tax revenues. Inter-fund loans would be repaid once sufficient impact fee revenues have been collected. The City does not currently assess interest on money borrowed from the general fund; however, the City may adopt a policy to do so.

Grants, Donations and Other Contributions: Grants and donations are not expected as a future funding source. The impact fees should be adjusted if grant monies are received. New development may be entitled to a reimbursement for any grants or donations received by the City for growth related projects, or for developer funded IFFP projects. It is anticipated that future project improvements will be funded by the developer. These costs have been removed from the calculation of the impact fee.

Debt Financing: In the event the City has not amassed sufficient impact fees to pay for the construction of time sensitive or urgent capital projects needed to accommodate new growth, the City must look to revenue sources other than impact fees for funding. The Impact Fees Act allows for the costs related to the financing of future capital projects to be included in the impact fee. This allows the City to finance and quickly construct infrastructure for new development and reimburse itself later from impact fee revenues for the costs of principal and interest. However, financing costs are not included in this analysis as a means to fund future projects.

SUMMARY OF IMPACT FEES

Figure 1 provides a summary schedule of the proposed impact fees for West Jordan City.

Figure 1. West Jordan City Impact Fees

Residential (per housing unit)	*Parks**	*Fire*	*Police*	*Water*	*Sewer*	*Storm Drainage*	*Transportation*	*Total***
Single Family	$3,367	$34	$203	$2,220	$1,931	Per Acre	$2,261	$10,016
Multifamily	$1,925	$20	$116	$982	$855	Per Acre	$1,336	$5,234
Nonresidential (per 1,000 Sq. Ft.)								
Commercial	-	$159	$118	Per Meter	Per Meter	Per Acre	$2,599	$2,876
Office	-	$265	$76	Per Meter	Per Meter	Per Acre	$1,639	$1,980
Industrial	-	$142	$17	Per Meter	Per Meter	Per Acre	$377	$536
Warehousing	-	$73	$16	Per Meter	Per Meter	Per Acre	$351	$440
Hospital	-	$234	$61	Per Meter	Per Meter	Per Acre	$1,305	$1,600
Nursing Home	-	$186	$35	Per Meter	Per Meter	Per Acre	$750	$971
Nonresidential (per bed)								
Assisted Living		$54	$12	Per Meter	Per Meter	Per Acre	$262	$328
Nonresidential (per room)								
Motel		$35	$25	Per Meter	Per Meter	Per Acre	$555	$615

*Charged only for residential development

**Not including Storm Drainage for the residential categories and Storm Drainage, Water, and Sewer for the nonresidential categories

Demand Placed Upon Existing Public Facilities

In this Impact Fee Facilities Plan, TischlerBise documents the demographic data and development projections used in the impact fee study for the City of West Jordan. Although a long-range plan is necessary for planning capital improvements, a shorter time frame of six years is critical for the impact fees analysis. Infrastructure standards will be calibrated using fiscal year 2014-2015 data and the first projection year for the cash flow model will be fiscal year 2015-2016. The City's fiscal year begins July 1st.

POPULATION AND HOUSING CHARACTERISTICS

According to the U.S. Census Bureau, a household is a housing unit that is occupied by year-round residents. Impact fees often use per capita standards and persons per housing unit or persons per household to derive proportionate-share fee amounts. When persons per housing unit are used in the fee calculations, infrastructure standards are derived using year-round population. When persons per household are used in the fee calculations, the impact fee methodology assumes all housing units will be occupied, thus requiring seasonal or peak population to be used when deriving infrastructure standards. TischlerBise recommends that impact fees for residential development in the City of West Jordan be imposed according to the number of year-round residents per housing unit.

As shown in the bottom portion of Figure 2, in 2013, dwellings with a single unit per structure (detached, attached, and mobile homes) averaged 3.55 persons per unit. Dwellings in structures with multiple units averaged 2.03 year-round residents per unit.

Figure 2. City of West Jordan Persons per Housing Unit

West Jordan Population and Housing Characteristics in 2013

Units in Structure	*Renter & Owner*			*Housing Units*	*Persons Per Hsg Unit*	*Vacancy Rate*
	Persons	Households				
Single Family	91,740	25,217	3.64	25,874	3.55	2.5%
Mobile Homes	2,552	713	3.58	713	3.58	0.0%
2+ Units	11,270	4,810	2.34	5,559	2.03	13.5%
Total	105,562	30,740	3.43	32,146		
			Vacant/Seasonal HU	1,406		

2013 Summary by Type of Housing	*Persons*	*House-holds*	*Persons per Household*	*Housing Units*	*Persons Per Hsg Unit*	*Housing Mix*
Single Family	94,292	25,930	3.64	26,587	**3.55**	83%
Multifamily	11,270	4,810	2.34	5,559	**2.03**	17%
Subtotal	105,562	30,740	3.43	32,146	**3.28**	*Vacancy Rate*
Group Quarters	556					4.4%
TOTAL	106,118	30,740		32,146		

Source: 2009-2013 American Community Survey 5-year Estimates, U.S. Census Bureau

RECENT RESIDENTIAL CONSTRUCTION

From 2000 to 2010, West Jordan increased by an average of 1,177 housing units per year. The chart at the bottom of Figure 3 indicates the estimated number of housing units added by decade in West Jordan. Housing units constructed per decade steadily increased from the 1970s to the 2000s, but construction may have slowed in the 2010s following the Great Recession. In fact, from 2010 to 2015 West Jordan added an average of only 327 housing units per year (Figure 4).

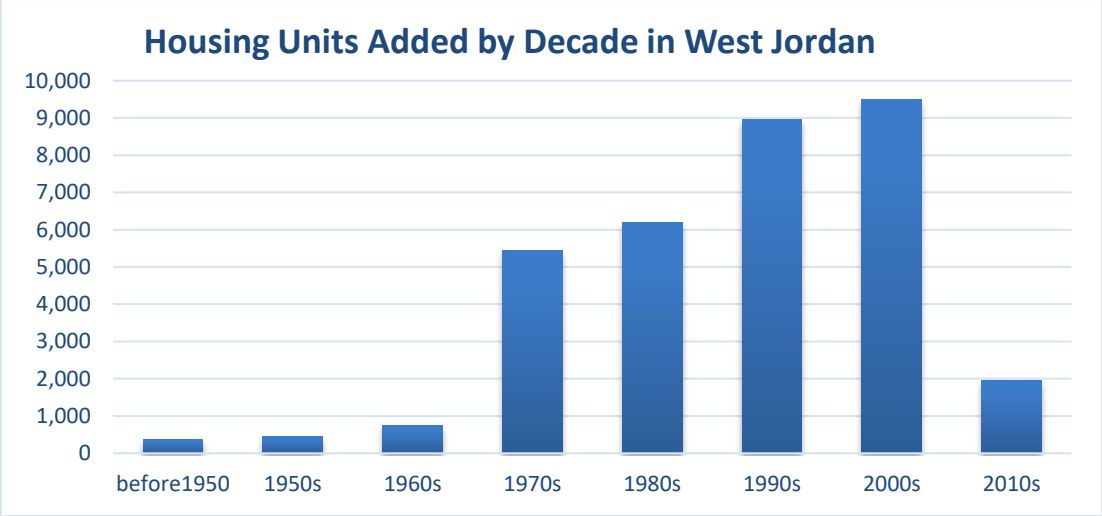
Figure 3. Housing Units by Decade

City of West Jordan, UT	
US Census Bureau Population in 2010*	103,712
Housing Units in 2010*	31,366
Total Housing Units in 2000	19,597
New Housing Units	11,769

From 2000 to 2010, West Jordan added an average of 1,177 housing units per year. From 2010 to 2015, the City added an average of 327 units per year.

**2010 Census Summary*

Table H1 from 2000 Census 100% Count data



Source for 1990s and earlier is Table B25034, American Community Survey, 2010.

Source for 2000s is U.S. Census Bureau

Source for 2010s is Department of Community Development permitting data

Figure 4. Housing Permitting from 2000-2015

Year	Single Family	Multifamily	Total
2001	386	193	579
2002	666	439	1,105
2003	1,221	655	1,876
2004	826	252	1,078
2005	860	152	1,012
2006	532	114	646
2007	162	426	588
2008	87	125	212
2009	141	414	555
2010	150	318	468
2011	148	90	238
2012	235	60	295
2013	177	52	229
2014	179	72	251
2015	126	333	459
Total	5,896	3,695	9,591

Source: Department of Development, City of West Jordan, UT

From 2001 to 2010, West Jordan added an average of 503 single family units and 309 multifamily housing units per year according to City building permit data.

From 2010 to 2015, West Jordan added an average of 192 single family units and 135 multifamily housing units per year according to City building permit data.

Current Estimate of Housing Units and Households

There were 31,898 housing units in West Jordan on July 1, 2011. Using building permit information for residential development from July 1, 2011 to June 30, 2015, TischlerBise estimates the number of housing units for July 1, 2015 is 33,222.

Figure 5. July 1, 2015, Estimate of Housing Units in the City of West Jordan

		Building Permits Issued [2]						
	July 1, 2011 Units [1]	*2011 (July 1-Dec 31)*	*2012 (Jan 1-Dec 31)*	*2013 (Jan 1-Dec 31)*	*2014 (Jan 1-Dec 31)*	*2015 (Jan 1-June 30)*	*Total Units Added*	*Estimated July 2015 Units [3]*
Single Family	24,587	78	235	177	179	126	795	25,382
Multifamily	7,311	12	60	52	72	333	529	7,840
Totals	*31,898*	90	295	*229*	*251*	*459*	*1324*	***33,222***

[1] TischlerBise 2013 Impact Fee Study for West Jordan, Utah
[2] City of West Jordan
[3] US 2010 Census units plus permitted units added.

Current Estimate of Population

TischlerBise estimates the City's current population at 106,021. This estimate is based on the number and type of residential permits issued for new construction since July 1, 2011 and persons per housing unit by type of housing unit. Detail is provided below in Figure 6.

Figure 6. July 1, 2015, Estimate of Population in the City of West Jordan

	Estimated July 2015 Units [1]	*Persons Per Hsg Unit[2]*	*Estimated July 2015 Population*
Single Family	25,382	3.55	90,106
Multifamily	7,840	2.03	15,915
Totals	33,222		***106,021***

[1] See Figure A3

[2] 2009-2013 American Community Survey 5-Year Estimates, U.S. Census Bureau.

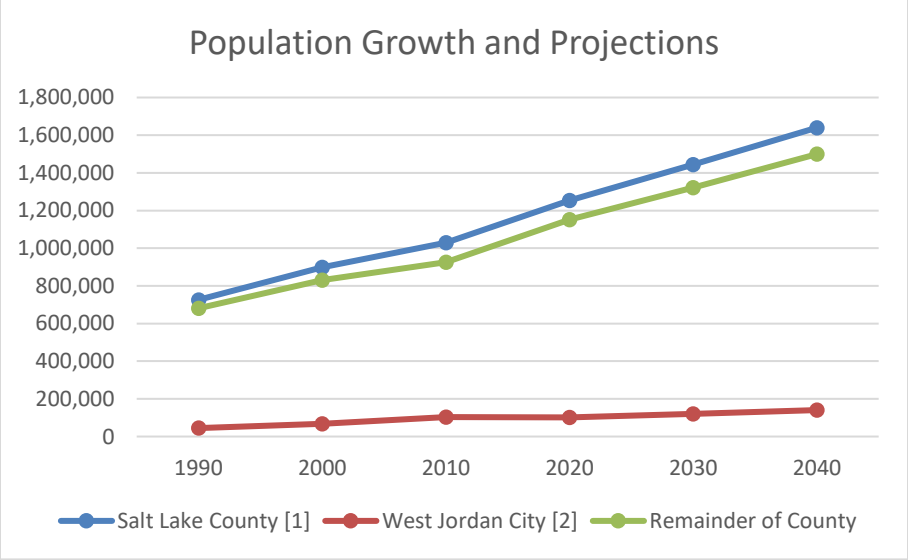
HOUSING UNIT AND POPULATION PROJECTIONS

To provide context for population growth in West Jordan, TischlerBise prepared a comparison to Salt Lake County projections. The Wasatch Front Region Small Area Socioeconomic Forecasts projects the presence of 1,442,988 persons in Salt Lake County by 2030. Figure 7 indicates the City's share of countywide population over time. The City population projections for 2020 and 2030 are interpolated using a steady growth rate derived from the 2010 Census population count and Wasatch Front Regional Council projections through 2040.

Figure 7. City of West Jordan Population Share

	1990	***2000***	***2010***	***2020***	***2030***	***2040***
Salt Lake County [1]	725,956	898,387	1,029,655	1,253,395	1,442,988	1,639,550
West Jordan City [2]	44,892	68,336	103,712	126,600	146,243	165,885
Remainder of County	681,064	830,051	925,943	1,126,795	1,296,745	1,473,665
West Jordan Share	6.2%	7.6%	10.1%	10.1%	10.1%	10.1%

Sources: [1] Salt Lake County 1990 - 2010 from U.S. Census Bureau, 2020 - 2030 projections from Table 1, Wasatch Front Region Small Area Socioeconomic Forecasts: 2007 - 2040 (released 2010). [2] City of West Jordan 1990 - 2010 from U.S. Census Bureau; 2020 - 2030 projections from Wasatch Front Region 2011-2040 Regional Transportation Plan



Using these population projections, TischlerBise calculated future housing unit growth at a rate of 848 units per year. However, as shown above in Figure 4, since 2010 the City has permitted an average of only 327 units per year, suggesting the local market has not rebounded to pre-recession levels of construction. Nevertheless, the market seems to be improving: January to June 2015 permitting totaled 337 units, indicating a more advanced recovery in the market. With these trends in mind and in conjunction with deliberations with City officials, TischlerBise projected an average annual increase of 600 units for the next five years. In 2021, average annual growth in housing units increases to 700, reflecting the City's large portion of the undeveloped land in the greater Salt Lake region.

Population increases are dependent upon housing mix, or the share of multifamily and single family units in a market. Residential permit data indicates that from 2003 to 2009, 64% of permitted units were single family, whereas from 2010 to 2015 only 52% were single-family. However, despite this increase in the share of multifamily housing permitted following the Great Recession, the City's new Cap and Grade guidelines limiting multifamily development suggests that the multifamily share of new permitted units will decrease in the future. As a result, new housing units were allocated as 70% single family units and 30% multifamily units (Figure 8).

Figure 8. City of West Jordan Annual Residential Development Projections

							~~Five-Yr Increments								
		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2030	2035	2040
Cumulative		*Base Yr*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*15*	*20*	
Housing Unit Projections	*PPHU*														
Single Family Units	*3.55*	25,382	25,802	26,222	26,642	27,062	27,482	27,972	28,462	28,952	29,442	29,932	32,382	34,833	37,283
Multifamily Units	*2.03*	7,840	8,020	8,200	8,380	8,560	8,740	8,950	9,160	9,370	9,580	9,790	10,840	11,890	12,940
Total Housing Units		33,222	33,822	34,422	35,022	35,622	36,222	36,922	37,622	38,322	39,022	39,722	43,223	46,723	50,223
Annual Net Increase in Housing Units			*600*	*600*	*600*	*600*	*600*	*700*	*700*	*700*	*700*	*700*	*700*	*700*	*700*
Population Projections															
Population		106,021	107,878	109,734	111,591	113,447	115,304	117,470	119,636	121,802	123,968	126,134	136,963	147,793	158,623
Annual Net Increase in Population			*1,857*	*1,857*	*1,857*	*1,857*	*1,857*	*2,166*	*2,166*	*2,166*	*2,166*	*2,166*	*2,166*	*2,166*	*2,166*

NONRESIDENTIAL DEVELOPMENT ESTIMATES AND PROJECTIONS

In addition to data on residential development, the calculation of impact fees requires data on nonresidential development. TischlerBise uses the term "jobs" to refer to employment by place of work. To convert jobs to floor area of nonresidential development, TischlerBise uses average square feet per employee multipliers, shown in Figure 9. The employee to building area ratios are derived using national data published by the Institute of Transportation Engineers (ITE) and the Urban Land Institute (ULI). In the impact fee study, vehicle trips per demand unit (i.e., one thousand square feet of floor area, beds, students, or rooms) will be used to differentiate fees by type of nonresidential development. In the table below, gray shading indicates three nonresidential development prototypes used by TischlerBise to calculate vehicle trips and potential impact fee revenue. The prototype for retail and/or general restaurant jobs is an average-size shopping center. The prototype for industrial jobs is manufacturing. For all other office uses/services, the prototype is an average sized general office building.

Figure 9. Employee and Building Area Ratios

ITE Code	*Land Use / Size*	*Demand Unit*	*Wkdy Trip Ends Per Dmd Unit**	*Wkdy Trip Ends Per Employee**	*Emp Per Dmd Unit*	*Sq Ft Per Emp*
110	Light Industrial	1,000 Sq Ft	6.97	3.02	2.31	433
130	Industrial Park	1,000 Sq Ft	6.83	3.34	2.04	489
140	Manufacturing	1,000 Sq Ft	3.82	2.13	1.79	558
150	Warehousing	1,000 Sq Ft	3.56	3.89	0.92	1,093
254	Assisted Living	bed	2.66	3.93	0.68	na
320	Motel	room	5.63	12.81	0.44	na
520	Elementary School	1,000 Sq Ft	15.43	15.71	0.98	1,018
530	High School	1,000 Sq Ft	12.89	19.74	0.65	1,531
540	Community College	student	1.23	15.55	0.08	na
550	University/College	student	1.71	8.96	0.19	na
565	Day Care	student	4.38	26.73	0.16	na
610	Hospital	1,000 Sq Ft	13.22	4.50	2.94	340
620	Nursing Home	1,000 Sq Ft	7.60	3.26	2.33	429
710	General Office (avg size)	1,000 Sq Ft	11.03	3.32	3.32	301
760	Research & Dev Center	1,000 Sq Ft	8.11	2.77	2.93	342
770	Business Park	1,000 Sq Ft	12.44	4.04	3.08	325
820	Shopping Center (avg size)	1,000 Sq Ft	42.70	na	2.00	500
710	Office**	1,000 Sq Ft	16.60	3.32	5.00	200

** Trip Generation, Institute of Transportation Engineers, 9th Edition (2012).*

*** Employees per SF from edcUTAH (Economic Development Corporation of Utah), Gardner Company, and Simons REALTORS.*

Similar to the population share evaluation discussed above, countywide job projections are shown in Figure 10 along with City of West Jordan's share. Salt Lake County and City of West Jordan jobs in 2000 are from the Census Transportation Package (CTPP). County and City data for 2005 through 2012 are from OnTheMap, the U.S. Census Bureau's web application, which provides employment estimates at the place level to analyze commuting patterns. 2015 and 2040 county job data are from the Wasatch Front Regional Council's 2015-2040 Regional Transportation Plan and the Utah Department of Workforce Services. West Jordan job shares for those years are interpolated using a simple growth rate formula.

Figure 10. City of West Jordan Job Share

	2002	***2004***	***2006***	***2008***	***2010***	***2012***	***2015***	***2040***
Salt Lake County [1]	519,446	517,164	555,952	584,905	558,519	580,945	655,896	996,611
West Jordan [2]	19,482	22,529	25,694	29,214	24,302	25,427	26,236	39,864
Remainder of County	499,964	494,635	530,258	555,691	534,217	555,518	629,660	956747
West Jordan Share	*3.75%*	*4.36%*	*4.62%*	*4.99%*	*4.35%*	*4.38%*	4.00%	4.00%

Sources: [1] Salt Lake County 2002 - 2012 from OnTheMap, U.S. Census Bureau web application, 2015 from UT Depart of Workforce Services June 19, 2015 memorandum [2] West Jordan 2002 - 2012 from OnTheMap, U.S. Census Bureau web application, 2015 from May 2015 UT Department of Workforce Services, 2040 from Wasatch Front Regional Council Region 2015-2040 Regional Transportation Plan

Estimated Nonresidential Floor Area

To determine current employment and nonresidential floor area in the City, TischlerBise obtained the number of jobs in the City of West Jordan in 2012 from OnTheMap, the U.S. Census Bureau's web application. To estimate number of jobs in 2015, TischlerBise determined the City's recent share of Salt Lake County employment (4 percent from 2010 to 2012) and applied that percentage to the County's May

2015 employment data. To convert employment to nonresidential square footage, the average square feet per employee factors from Figure A8 are used. Current (2015) estimates of employment and nonresidential square footage are shown below in Figure 11.

Figure 11. City of West Jordan Estimated Nonresidential Floor Area

	2012 All Jobs [1]	%	2015 Jobs [2]	Sq Ft per Job [3]	Floor Area
Industrial/Warehousing	7,589	30%	7,830	558	4,369,368
Retail, Accommodation & Food Services	7,687	30%	7,932	500	3,965,763
All Other Services	10,151	40%	10,474	200	2,094,781
TOTAL	25,427	100%	26,236		10,429,912

[1] Source: U.S. Census Bureau, OnTheMap web application, 2012 all jobs.
[2] Estimated based on West Jordan job growth as a share of Salt Lake County from 2010-2012 (4%).
[3] Industrial and Retail from "Employee and Building Area Ratios" (Figure A8); Office obtained from from local Sources: edcUTAH (Economic Development Corporation of Utah), Gardner Company, and Simons REALTORS.

Employment and Nonresidential Floor Area Projections

Based on projected total number of jobs described above, annual projections of employment growth can be derived. It is assumed that the distribution of new jobs will maintain the same distribution by type of employment as detailed in Figure 11. Nonresidential square footage is derived by multiplying the projected employment by the applicable square footage per employee. Results are shown in Figure 12.

Figure 12. City of West Jordan Annual Nonresidential Development Projections

			~~Five-Yr Increments								
		2015	2016	2017	2018	2019	2020	2025	2030	2035	2040
Cumulative		*Base Yr*	*1*	*2*	*3*	*4*	*5*	*10*	*15*	*20*	*25*
Job Projections											
Total Jobs		26,236	26,781	27,326	27,871	28,416	28,962	31,687	34,413	37,139	39,864
	%										
Industrial	*30%*	7,830	7,993	8,156	8,319	8,481	8,644	9,457	10,271	11,085	11,898
Retail	*30%*	7,932	8,096	8,261	8,426	8,591	8,756	9,580	10,404	11,228	12,052
Office	*40%*	10,474	10,692	10,909	11,127	11,344	11,562	12,650	13,738	14,827	15,915
Annual Net Increase in Jobs			*545*	*545*	*545*	*545*	*545*	*545*	*545*	*545*	*545*
Nonresidential Square Footage (1,000 SF)											
	SF/Empl										
Industrial	*558*	4,369	4,460	4,551	4,642	4,733	4,823	5,277	5,731	6,185	6,639
Retail	*500*	3,966	4,048	4,131	4,213	4,295	4,378	4,790	5,202	5,614	6,026
Office	*200*	2,095	2,138	2,182	2,225	2,269	2,312	2,530	2,748	2,965	3,183
Total Nonres Sq. Ft.		10,430	10,647	10,863	11,080	11,297	11,514	12,597	13,681	14,764	15,848
Annual Net Increase in 1,000 SF			*217*	*217*	*217*	*217*	*217*	*217*	*217*	*217*	*217*

AVERAGE DAILY VEHICLE TRIPS

Residential Vehicle Trip Rates

As an alternative to simply using the national average trip generation rate for residential development, the Institute of Transportation Engineers (ITE) publishes regression curve formulas that may be used to

derive custom trip generation rates using local demographic data. Key independent variables needed for the analysis (i.e., vehicles available, housing units, households, and persons) are available from the U.S. Census Bureau 2009-2013 American Community Survey (ACS) 5-year estimate data for the City of West Jordan. This data was used to derive custom average weekday vehicle trip ends by type of housing, as shown below in Figure 13. A vehicle trip end represents a vehicle either entering or exiting development, as if a traffic counter were placed across a driveway.

Figure 13. Average Weekday Vehicle Trip Ends by Housing Type in City of West Jordan

West Jordan, Utah		*Households (2)*			*Vehicles per*
	Vehicles Available (1)	*Single Family Units (3)*	*Multifamily Units*	*Total*	*Household by Tenure*
Owner-occupied	55,373	22,982	565	23,547	2.35
Renter-occupied	11,693	2,948	4,245	7,193	1.63
TOTAL	67,066	23,547	24,112	30,740	2.18
Housing Units (6) =>		26,587	5,559	32,146	

	Persons (4)	*Trip Ends (5)*	*Vehicles by Type of Housing*	*Trip Ends (6)*	*Average Trip Ends*	*Trip Ends per Housing Unit*
Single Family Units	94,292	244,011	58,837	340,113	292,062	**11.0**
Multifamily Units	11,270	39,042	8,229	32,717	35,880	**6.5**
TOTAL	105,562	283,053	67,066	372,830	327,942	**10.2**

(1) Vehicles available by tenure from Table B25046, American Community Survey, 2013.
(2) Households by tenure and units in structure from Table B25032, American Community Survey, 2013.
(3) Single Family units include detached homes, attached homes and mobile homes.
(4) Persons by units in structure from Table B25033, American Community Survey, 2013.
(5) Vehicle trips ends based on persons using formulas from Trip Generation (ITE 2012). For single family housing (ITE 210), the fitted curve equation is EXP(0.91*LN(persons)+1.52). To approximate the average population of the ITE studies, persons were divided by 169 and the equation result multiplied by 169. For multifamily housing (ITE 220), the fitted curve equation is (3.47*persons)-64.48.
(6) Vehicle trip ends based on vehicles available using formulas from Trip Generation (ITE 2012). For single family housing (ITE 210), the fitted curve equation is EXP(0.99*LN(vehicles)+1.81). To approximate the average number of vehicles in the ITE studies, vehicles available were divided by 229 and the equation result multiplied by 229. For multifamily housing (ITE 220), the fitted curve equation is (3.94*vehicles)+293.58.

Nonresidential Vehicle Trip Rates

Vehicle trips rates for nonresidential development are from the reference book, *Trip Generation* published by the Institute of Transportation Engineers (ITE) in 2012.

Trip Rate Adjustments

Trip generation rates are adjusted to avoid double counting each trip at both the origin and destination points. Therefore, the basic trip adjustment factor is 50 percent. As discussed below, additional adjustments are made to ensure the fees are proportionate to the infrastructure demand for particular types of development.

Adjustment for Journey-To-Work Commuting

According to the National Household Travel Survey (2009), home-based work trips are typically 31 percent of "production" trips, or, in other words, out-bound trips (which are 50 percent of all trip ends). Also, Census Bureau's web application "OnTheMap" indicates that 91 percent of West Jordan's workers travel outside the City for work. In combination, these factors (0.31 x 0.50 x 0.91 = 0.14) account for 14 percent of additional production trips. The total adjustment factor for residential includes attraction trips (50% of

trip ends) plus the journey-to-work commuting adjustment (14% of production trips) for a total of 64 percent (Figure 14).

Figure 14. Adjustment for Journey-to Work Commuting

Employed West Jordan Residents (2012)	49,231
West Jordan Residents Working in City (2012)	4,242
West Jordan Residents Commuting Outside City for Work	44,989
Percent Commuting out of the City	**91%**
Additional Production Trips	14%
Residential Trip Adjustment Factor	***64%***

Source: U.S. Census, OnTheMap Application
Longitudinal-Employer Household Dynamics (LEHD) Program; ITE

Adjustment for Pass-By Trips

The basic trip adjustment factor of 50 percent is applied to the Office/Institutional and Industrial categories. The Retail category has a trip factor of less than 50 percent because this type of development attracts vehicles as they pass-by on arterial and collector roads. For an average size shopping center, the ITE manual indicates that an average size shopping center has a pass-by rate of 34 percent.

Estimated Vehicle Trips in West Jordan

As shown in Figure 15 there are an average of 299,111 vehicle trips generated by existing development in the City of West Jordan on an average weekday. As the table indicates, residential development is estimated to generate 215,804 vehicle trips compared to 83,307 vehicle trips generated by nonresidential development. An example of the calculation is as follows for detached units: 26,907 single family units x 11 vehicle trips per day per unit x 64% adjustment factor = 189,425 total vehicle trips per day from single family units in the City.

Figure 15. Average Daily Trips

Residential Vehicle Trips on an Average Weekday (2014)		
Residential Units	*Assumptions*	
Single Family	26,907	
Multifamily	6,341	
Average Weekday Vehicle Trip Ends per Unit*	*Trip Rate*	*Trip Factor*
Single Family	11.00	64%
Multifamily	6.50	64%
Residential Vehicle Trip Ends of an Average Weekday		
Single Family	189,424	
Multifamily	26,379	*% of total*
Total Residential Trips	**215,804**	***72%***

Nonresidential Vehicle Trips on an Average Weekday (2014)		
Nonresidential Gross Floor Area (1,000 sq. ft.)	*Assumptions*	
Industrial	4,369	
Retail	3,966	
Office	2,095	
Average Weekday Vehicle Trips Ends per 1,000 Sq. Ft.	*Trip Rate*	*Trip Factor*
Industrial	3.82	50%
Retail	42.70	34%
Office	16.60	50%
Nonresidential Vehicle Trips on an Average Weekday		
Industrial	8,345	
Retail	57,575	
Office	17,387	*% of total*
Total Nonresidential Trips	**83,307**	***28%***
TOTAL TRIPS	**299,111**	***100%***

**Trip rates are customized for City of West Jordan See accompanying tables and discussion.*

***Trip rates are from the Institute of Transportation Engineers (ITE) Trip Generation Manual (2012)*

DEMAND INDICATORS BY SIZE OF HOUSING

Custom tabulations of demographic data by bedroom range were created from individual survey responses provided by the U.S. Census Bureau, in files known as Public Use Micro-data Sample (PUMS). Because PUMS files are only available for areas of roughly 100,000 persons, the City of West Jordan is included with other jurisdictions. In addition, the City is included in two Public Use Micro-data Areas (PUMA): PUMAs 35006 and 35007. TischlerBise derived persons per housing unit and trip rates by bedroom count for both single family units and multifamily units using the data from these files.

Figure 16 is for **single family units** and shows trip generation rates and average persons per housing unit by bedroom range, from PUMS data. Recommended multipliers were scaled to make the average value for all housing units in PUMAs 35006 and 35007 match the average value derived from 2009-2013 American Community Survey 5-year data for the City of West Jordan.

Figure 16. Single Family Trip Generation Rates and Household Sizes by Bedroom Count

City of West Jordan, Utah

Single Family	Persons (1)	Trip Ends (2)	Vehicles Available (1)	Trip Ends (3)	Average Trip Ends	Housing Units (1)	Recommended Multipliers (4) Trip Ends per Housing Unit	Recommended Multipliers (4) Persons per Housing Unit
0-3 Bedrooms	3,233	9,394	2,401	14,047	11,721	1,192	9.0	2.76
4 Bedrooms	3,372	9,761	2,310	13,520	11,640	980	10.9	3.50
5 Bedrooms	2,969	8,694	1,945	11,403	10,048	732	12.5	4.13
6+ Bedrooms	2,013	6,104	1,202	7,081	6,593	420	14.3	4.88
GRAND TOTAL	11,587	33,953	7,858	46,050	40,002	3,324	11.0	3.55

(1) 2009-2013 American Community Survey 5-year Estimates, Public Use Microdata Sample for UT PUMAs 35006 and 35007.
(2) Vehicle trips ends based on persons using formulas from Trip Generation (ITE 2012). For single family housing (ITE 210), the fitted curve equation is EXP(0.91*LN(persons)+1.52). To approximate the average population in the ITE studies, persons were divided by 21 and the equation result multiplied by 21.
(3) Vehicle trip ends based on vehicles available using formulas from Trip Generation (ITE 2012). For single family housing (ITE 210), the fitted curve equation is EXP(0.99*LN(vehicles)+1.81). To approximate the average number of vehicles in the ITE studies, vehicles available were divided by 31 and the equation result multiplied by 31.
(4) Recommended multipliers are scaled to make the average value by type and size of single family housing for PUMAs 00502 and 00507 match the average value derived for the City of West Jordan from 2009-2013 American Community Survey 5-year data.

Figure 16 is for **multifamily units** and shows trip generation rates and average persons per housing unit by bedroom range, from PUMS data. Recommended multipliers were scaled to make the average value for all housing units in PUMAs 35006 and 35007 match the average value derived from 2009-2013 American Community Survey 5-year data for the City of West Jordan.

Figure 16. Multifamily Trip Generation Rates and Household Sizes by Bedroom Count

City of West Jordan, Utah

Multifamily	Persons (1)	Trip Ends (2)	Vehicles Available (1)	Trip Ends (3)	Average Trip Ends	Housing Units (1)	Recommended Multipliers (4) Trip Ends per Housing Unit	Recommended Multipliers (4) Persons per Housing Unit
0-1 Bedrooms	199	626	132	814	720	153	4.5	1.27
2 Bedrooms	398	1,317	247	1,267	1,292	183	6.7	2.12
3+ Bedrooms	285	924	148	877	901	88	9.7	3.16
GRAND TOTAL	882	2,867	527	2,957	2,912	424	6.5	2.03

(1) 2009-2013 American Community Survey 5-year Estimates, Public Use Microdata Sample for UT PUMAs 35006 and 35007.
(2) Vehicle trips ends based on persons using formulas from Trip Generation (ITE 2012). For multifamily housing (ITE 220), the fitted curve equation is (3.47*persons)-64.48.
(3) Vehicle trip ends based on vehicles available using formulas from Trip Generation (ITE 2012). For multifamily housing (ITE 220), the fitted curve equation is (3.94*vehicles)+293.58.
(4) Recommended multipliers are scaled to make the average value by type and size of single family housing for PUMAs 00502 and 00507 match the average value derived for the City of West Jordan from 2009-2013 American Community Survey 5-year ACS data.

DETAILED DEVELOPMENT PROJECTIONS

Demographic data shown in Figure 17 provides key inputs for updating development fees in the City of West Jordan. Cumulative data are shown at the top and projected annual increases by type of development are shown at the bottom of the table. As discussed earlier, TischlerBise recommends the use of persons per housing unit to derive impact fees. Therefore, vacancy rates and number of households are not essential to the demographic analysis.

Figure 17. Annual Demographic Data

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2030	2035	20-Year
Cumulative	*Base Yr*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*15*	*20*	**Net Increase**
Population	106,021	107,878	109,734	111,591	113,447	115,304	117,470	119,636	121,802	123,968	126,134	136,963	147,793	41,772
Jobs	26,236	26,781	27,326	27,871	28,416	28,962	29,507	30,052	30,597	31,142	31,687	34,413	37,139	10,903
Housing Units	*33,222*	*33,822*	*34,422*	*35,022*	*35,622*	*36,222*	*36,922*	*37,622*	*38,322*	*39,022*	*39,722*	*43,223*	*46,723*	*13,501*
Single Family Units	25,382	25,802	26,222	26,642	27,062	27,482	27,972	28,462	28,952	29,442	29,932	32,382	34,833	9,451
Multifamily Units	7,840	8,020	8,200	8,380	8,560	8,740	8,950	9,160	9,370	9,580	9,790	10,840	11,890	4,050
Jobs to Housing Ratio	0.79	0.79	0.79	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.79	
Nonres Sq Ft in thousands (KSF)														
Industrial	4,369	4,460	4,551	4,642	4,733	4,823	4,914	5,005	5,096	5,186	5,277	5,731	6,185	
Retail/ Restaurant	3,966	4,048	4,131	4,213	4,295	4,378	4,460	4,543	4,625	4,707	4,790	5,202	5,614	
Office/ Institutional	2,095	2,138	2,182	2,225	2,269	2,312	2,356	2,399	2,443	2,487	2,530	2,748	2,965	
Total	10,430	10,647	10,863	11,080	11,297	11,514	11,730	11,947	12,164	12,380	12,597	13,681	14,764	
Avg Sq Ft Per Job	398	398	398	398	398	398	398	398	398	398	398	398	398	
Nonres. Veh. Trips	83,307	85,038	86,769	88,500	90,231	91,962	93,693	95,424	97,155	98,886	100,617	109,272	117,927	
														2015-2035
Annual Increase		15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	29-30	34-35	***Avg Anl***
Population		1,857	1,857	1,857	1,857	1,857	2,166	2,166	2,166	2,166	2,166	2,166	2,166	2,089
Jobs		545	545	545	545	545	545	545	545	545	545	545	545	545
Housing Units		600	600	600	600	600	700	700	700	700	700	700	700	675
Industrial (1,000 SF)		91	91	91	91	91	91	91	91	91	91	91	91	91
Retail/ Restaurant (1,000 SF)		82	82	82	82	82	82	82	82	82	82	82	82	82
Office/ Institutional (1,000 SF)		44	44	44	44	44	44	44	44	44	44	44	44	44
		217	217	217	217	217	217	217	217	217	217	217	217	217

Parks Impact Fee Facilities Plan

West Jordan has determined that past and future growth is placing demands on the various services and facilities provided by the City, including parks. The City is expected to continue to grow in population from approximately 106,000 in 2015 to approximately 148,000 people by 2030. Growth will continue to create a need for additional park land acquisition and development, park improvements, and the construction of trails. Additionally, new development will benefit from the planned construction of a new recreation center which is planned to open in December 2017.

PARKS AND RECREATION FUNDING SOURCES

The City has studied various ways of providing the funding parks facilities. The sources of revenue for parks are General Fund revenues, grants, and impact fees. In evaluating the allocation of the costs borne in the past and to be borne in the future to the benefits already received and yet to be received, the City has determined that impact fees are the most equitable way of financing growth-related parks facilities.

EXISTING LEVELS OF SERVICE

Community Park Land Level of Service

Figure 18 shows the current inventory of community park acres, levels of service (LOS), and costs per capita on which this component of the impact fee is based. As shown in Figure 18, West Jordan currently has 211.66 acres of community parks. West Jordan plans to develop its existing inventory of community parks and has no plans to acquire additional community park land at this time. This acreage does not include open space, which is characterized by limited improvements and passive uses. The current LOS for community park acreage is derived by dividing the total number of acres by the 2015 population estimate, resulting in a current LOS of 2.00 community park acres per 1,000 persons (211.66 acres of community parks / (106,021 residents in base year / 1,000) = 2.00 community park acres per 1,000 persons (rounded)).

Figure 18. Community Parks Level of Service

Community Parks Site	Developed Acres
Ron Wood Memorial Park	24.46
Utah Youth Sports Complex	97.30
Veterans Memorial Park	89.90
Total:	**211.66**

Level of Service (LOS) Standards	
Inventory of Community Park Acres	211.66
2015 West Jordan Population	106,021
LOS: Acres per 1,000 Persons	**2.00**

Source: City of West Jordan, Utah

Neighborhood Parks Level of Service

As shown in Figure 19, West Jordan currently has 111.49 acres of neighborhood park land (excluding open space). The existing LOS, calculated in the same fashion as with community parks, is 1.05 acres per 1,000 persons (rounded).

Figure 19. Neighborhood Parks Level of Service

Neighborhood Parks Site	Developed Acres
Bicentennial Park	1.55
Brigadoon Park	2.34
Browns Meadow Park	5.89
Camelot Park	2.24
Colonial Estates Park	2.81
Constitution Park	13.65
Dixie Valley Park	3.82
Dorilee Park	2.94
Hand Cart Park	1.30
Harvest Estates Park	2.95
Jordan Meadows Park	4.09
Lindsay Estates Park (Paul D. Henderson Memorial Park)	1.68
Maples Park	2.00
McHeather Park	1.60
Meadow Greens Farm Park	1.57
Oaks Park East	3.06
Oaks Park	4.37
Park Village Park	4.85
Plum Creek Park/Urban Fishery	3.66
Rail Road Park	6.53
Ranches Park Common	1.49
Senior Housing Park	2.53
Shadow Mountain South Park	7.20
Stone Creek Park 1	2.60
Stone Creek Park 2	1.85
Sunset Park	2.13
Sycamore Ridge Park	1.43
Teton Estates Park	11.28
Vista West Park	2.33
Wildflower Park	5.75
Total:	**111.49**

Level of Service (LOS) Standards	
Inventory of Developed Park Acres	111.49
2015 West Jordan Population	106,021
LOS: Acres per 1,000 Persons	**1.05**

Source: City of West Jordan, Utah

Park Improvement Level of Service

Figure 20 lists the current level of service for park improvements at community and neighborhood parks. The total value of park improvements is based on the inventory of improvements provided by City staff. There are 181 park improvements in West Jordan parks, resulting in a current LOS of 1.71 improvements per 1,000 persons.

Figure 20. Level of Service for Park Improvements

Improvement Type	*Total Units*	*Unit Cost*	*Total*
Pavillion	43	$37,000	$1,591,000
Bathroom	9	$200,000	$1,800,000
Water Fountain and Hookup	23	$4,000	$92,000
Playground [1]	45	$62,000	$2,790,000
Basketball Court	11	$50,000	$550,000
Tennis Court	9	$60,000	$540,000
Softball Field	8	$200,000	$1,600,000
Baseball Field	12	$200,000	$2,400,000
Soccer Field [2]	20	$70,000	$1,400,000
Splashpad	1	$650,000	$650,000
Total	*181*	*$1,533,000*	*$13,413,000*

[1] Used large playground cost as median cost between small and community-wide park playgrounds

[2] Derived from cost of soccer fields in nearby communities

Level of Service (LOS) Standards

Number of Improvements	181
2015 West Jordan Population	106,021
Current LOS: Improvements per 1,000 Persons	***1.71***

Source: City of West Jordan, Utah

Trails Level of Service

Figure 21 shows West Jordan's current inventory of trails, provided by the City. The City has 63,782.40 feet (or 12.80 miles) of trails, providing a LOS of 0.60 linear feet per person (63,782.40 total linear feet / 106,021 persons = 0.60). This does not include sidewalk connections, which the City no longer considers part of the trail system.

Figure 21. Level of Service for Trail Development

Trail Name	Location	Miles	Linear Feet
Jordan River Trail	7700 s - Winchester	1.91	10,084.80
Jordan River Trail	8350 s - 9000 s	1.08	5,702.40
Jordan River Trail (Lucky Clover Cont.)	7200 s 1050 w	0.22	1,161.60
Jordan River Trail (8600 s Connector)	8600 s 1075 w	0.10	528.00
Mountain View Corridor Trail	MVC 9000 s - 9400 s	1.50	7,920.00
Mountain View Corridor Trail	MVC 9000 s - 7800 s	1.62	8,553.60
Mountain View Corridor Trail	MVC 7800 s - 7000 s	1.17	6,177.60
Barney's Wash Trail	8950 s 6400 w - Duck Ridge	0.33	1,742.40
Barney's Creek Trail	8600 s 6260 w - 6130 w	0.27	1,425.60
Barney's Creek Trail	8350 s 6000 w 5900 w	0.18	950.40
No Name (High School Wash)	8085 s 6400w - 6500 w	0.18	950.40
Sycamores Trail	New Sycamores Dr	0.39	2,059.20
Clay Hollow Wash Trail	7800 s U-111 - 6700 w	0.27	1,425.60
Clay Hollow Wash Trail	7800 s 6700 w - 6450 w	0.29	1,531.20
Clay Hollow Wash Trail (connector)	7800 s 6540 w	0.01	52.80
Clay Hollow Wash Trail (connector)	7800 s 6500 w	0.07	369.60
Senior Housing Trail	Sugar Factory Rd 2200 w	0.31	1,636.80
Barney's Creek Trail (north)	7900 s 4800 w - 5000 w	0.26	1,372.80
Barney's Creek Trail (south)	7900 s 4800 w - 5600 w	1.10	5,808.00
Barney's Creek Trail (Connector west)	Mack's Inn Circle	0.01	52.80
Barney's Creek Trail (Connector Tunnel)	Grizzly Way 8100 s	0.07	369.60
Barney's Creek Trail (Connector School)	Amethyst Dr 5140 w	0.07	369.60
Barney's Creek Trail (Connector Park)	Amethyst Dr 4880 w	0.02	105.60
Barney's Creek Trail	Window Ranch Wy 5600 w	0.18	950.40
U-111 Frontage Trail	U-111 7800 s - 8200 s	0.47	2,481.60
	Total	**12.08**	**63,782.40**

Level of Service (LOS) Standards	
Total Linear Feet	63,782
2015 West Jordan Population	106,021
LOS: Linear Feet per Person	***0.60***

PROJECTED NEED FOR PARK FACILITIES

The need for additional park infrastructure, based on projected population growth over the next six years and LOS standards as discussed above, is shown in Figure 22. LOS standards, park and trail development, land purchase, and recreation improvement costs are shown in Figure 22. Need is projected by multiplying expected population by level of service standard. Cost is calculated by determining six year increases and multiplying by the cost factors. For instance, population growth over six years necessitates the acquisition of 12.02 additional neighborhood park acres (123.34 acres in 2021 – 111.32 acres in 2015). Each acre costs $135,000 to acquire on average, yielding a total cost of $1,622,700).

Over the next six years, it is projected that West Jordan will spend approximately $2.6 million to develop community parks, $3 million to acquire land for and develop new neighborhood parks, and $1.5 million for recreation improvements. Additionally, it is projected that the City will provide 6,869 linear feet of trails costing an estimated $560,000.

Figure 22. Projected Growth Needs

Park Level of Service (LOS) Standards

Community Parks LOS	2.00	acres per 1,000 persons
Neighborhood Park LOS	1.05	acres per 1,000 persons
Land Acquisition Cost	$135,000	per acre
Park Development Cost	$112,800	per acre
Recreation Improvements LOS	1.71	per 1,000 persons
Recreation Improvements Cost	$74,100	per improvement
Trails Level of Service	0.60	linear feet per person
Trails Cost	$82	per linear foot

			Infrastructure Needed			
	Year	*West Jordan Population*	*Community Park Development*	*Neighborhood Park Acquisition and Development*	*Recreation Improvements*	*Linear Feet of Trails*
Base	2015	106,021	212.04	111.32	181.30	63,613
1	2016	107,878	215.76	113.27	184.47	64,727
2	2017	109,734	219.47	115.22	187.65	65,841
3	2018	111,591	223.18	117.17	190.82	66,955
4	2019	113,447	226.89	119.12	194.00	68,068
5	2020	115,304	230.61	121.07	197.17	69,182
6	2021	117,470	234.94	123.34	200.87	70,482
Six-Yr Increase		11,449	22.90	12.02	19.57	6,869

Cost of Community Park Development	$2,583,120
Cost of Neighborhood Park Land Acquisition	$1,622,700
Cost of Neighborhood Park Development	$1,355,856
Cost of Recreation Improvements	$1,450,137
Cost of Trail Improvements	$563,258
	$7,575,071

PLANNED RECREATION CENTER

Discussions with staff indicate that the City of West Jordan will construct a recreation center; it currently does not have any indoor recreation space. The center will be the City's first and serve its entire population. Initial plans indicate the cost of construction will total $47 million. Groundbreaking is planned for 2017.

This facility will be designed and constructed to accommodate the recreation needs of both the City's current and future populations for at least the next 20 years. To determine new growth's share of this facility, TischlerBise calculated future population growth from 2017 to 2037 as a share of total population in 2037 (1 – (2017 Population / 2037 Population)). Future population growth will account for 28 percent of the population in 2037 (1 – (109,734 population in 2016 / 152,125 population in 2037) = 28%). These projections indicate an increase in population of 42,391 people during this time period.

This growth share is then multiplied by the cost of the facility. Therefore, the 28 percent share is multiplied by $47 million cost, resulting in a growth share cost of $13,096,840.34, which is divided by the projected population increase of 42,391 to yield a cost per person of $308.96.

This calculation is shown in Figure 23. Please note that because the City will not pay the growth share of future debt service with other revenue, a credit for future debt service payments is not applicable.

Figure 23: Planned Recreation Center

Recreation Center	
Total Cost [1]	$47,000,000
Growth Share (2017-2037) [2]	28%
Growth Share Cost	$13,096,849.34
Population Increase	42,391
Cost per Person	**$308.96**

[1] City staff estimate

[2] 1-(Population in 2017 / Population in 2037)

IMPACT FEE ELIGIBLE PROJECTS

Figure 9 shows the City's planned impact fee eligible projects. As noted above, the City plans to begin construction on the new Recreation Center in 2017. Roughly $13.1 million of the $47 million total cost is impact-fee eligible. These costs are represented below in 2017, since the City will have to "upfront" these costs. Additionally, the City's CIP identifies two specific park development projects on existing City-owned land that will begin in 2016 and 2020, respectively: Maple Hills ($1,100,000 over two years) and Ron Woods Phase 3 ($2,000,000). However, the CIP does not include any growth-related projects for park land acquisition or trail development. Therefore, these costs are projected forward based on the needs described in Figure 22, with no specific projects listed. For these facilities, project lists will have to be further refined and programmed in the next iteration of the Parks CIP.

Figure 24. Identified Impact Fee Eligible Projects

Project	Past Years	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	Total
Ron Woods Phase 3	$0	$0	$0	$0	$0	$2,000	$0	**$2,000**
Other Comm. Park Development	$0	$97	$97	$97	$97	$97	$97	**$583**
Neigh. Parks Land Acq.	$0	$263	$263	$263	$263	$263	$306	**$1,623**
Maple Hills	$0	$750	$350	$0	$0	$0	$0	**$1,100**
Other Neigh. Park Development	$0	$43	$43	$43	$43	$43	$43	**$256**
Rec. Improvements	$0	$235	$236	$235	$236	$235	$274	**$1,450**
Trails	$0	$91	$91	$91	$91	$91	$107	**$563**
Recreation Center	$0	$0	$13,097	$0	$0	$0	$0	**$13,097**
Total	$0	$1,479	$14,177	$729	$730	$2,729	$827	**$20,672**

FUNDING STRATEGY FOR PARKS INFRASTRUCTURE

The cash flow summary for park improvements shown in Figure 25 indicates impact fee revenue and expenditures necessary to meet the demand for growth-related park facilities. As indicated in Figure 25, park impact fees are projected to yield a revenue stream that averages approximately $1.8 million per year over the next six years. Growth-related expenditures will exceed impact fee revenue due to the upfront costs of the recreation center (explained above) and the presence of a debt service credit in the impact fee calculation. To the extent the rate of development either accelerates or slows down, there will be a corresponding change in the impact fee revenue and capital costs.

Figure 25. Cash Flow Summary for Parks and Recreation

	Year =>	1	2	3	4	5	6	*Cumulative*	*Average*
(2015$ in thousands)	2015	2016	2017	2018	2019	2020	2021	*Total*	*Annual*
REVENUES									
Parks Fee-SF		$1,414	$1,414	$1,414	$1,414	$1,414	$1,650	$8,721	$1,454
Parks Fee-MF		$347	$347	$347	$347	$347	$404	$2,137	$356
Parks Impact Fees		*$1,761*	*$1,761*	*$1,761*	*$1,761*	*$1,761*	*$2,054*	*$10,858*	*$1,810*
CAPITAL COSTS									
Comm. Parks - Development		$420	$418	$418	$418	$420	$488	$2,583	$431
Neigh. Parks - Land Acquisition		$263	$263	$263	$263	$263	$306	$1,623	$270
Neigh. Parks - Development		$220	$220	$220	$220	$220	$256	$1,356	$226
Rec. Improvements		$235	$236	$235	$236	$235	$274	$1,450	$242
Trails		$91	$91	$91	$91	$91	$107	$563	$94
Recreation Center		$0	$0	$13,097	$0	$0	$0	$13,097	$2,183
Parks Capital Cost		*$1,229*	*$1,229*	*$14,325*	*$1,229*	*$1,229*	*$1,432*	*$20,672*	*$3,445*
NET CAPITAL FACILITIES CASH FLOW - Parks									
Annual Surplus or (Deficit)		$532	$532	($12,564)	$532	$532	$623	($9,814)	($1,636)
Cumulative Surplus or (Deficit)		$532	$1,064	($11,500)	($10,968)	($10,436)	($9,814)		

Fire Impact Fee Facilities Plan

West Jordan has determined that past and future growth is placing demands on the various services and facilities provided by the City, including fire services and facilities. The City recently opened its new Station 54 and does not intend to undertake any additional station construction in the next six years. (The fire impact fee includes Station 54 debt service as a cost recovery component.) However, growth will continue to create additional need for fire vehicles and apparatus.

FIRE FUNDING SOURCES

The City has studied various ways of providing the funding for fire facilities. The sources of revenue for fire are General Fund revenues, grants, or impact fees. In evaluating the allocation of the costs borne in the past and to be borne in the future and the benefits already received and yet to be received, the City has determined that impact fees are the most equitable way of financing growth-related fire facilities, vehicles, and apparatus..

FIRE APPARATUS / VEHICLES LEVEL OF SERVICE STANDARDS

Pursuant to revised Section 11-36a-102(17) of the Utah Code, only fire suppression vehicles costing in excess of $500,000 are now considered public safety facilities eligible for impact fee revenue use. West Jordan currently has seven vehicles which fit this criterion. Figure 26 displays the type of vehicle, unit (replacement) cost, and the number in the fleet.

Additionally, Section 11-36a-202(2) of the Utah Code now prohibits the imposition on residential development of impact fees for fire suppression vehicles. In order to ensure nonresidential development only pays its fair share of the cost of apparatus fleet expansion, the nonresidential LOS standard is determined by multiplying the current pieces of apparatus (7) by the proportionate share of nonresidential calls for service and dividing by jobs in 2015. Therefore, 7 pieces of apparatus x 33.8% proportionate share of nonresidential / 26,236 current jobs in 2015 = 0.00009 apparatus per job.

Figure 26. Fire Vehicles and Apparatus Level of Service

Fire Apparatus	*Items*	*Unit Cost*	*Total Cost*
Heavy Rescue Truck	1	$600,000	$600,000
Engine	5	$640,000	$3,200,000
Aerial Ladder	1	$1,000,000	$1,000,000
	7		**$4,800,000**

Allocation Factors for Fire Apparatus

Average Cost per Unit	**$686,000**
Nonresidential Share	33.8%
Jobs in 2015	26,236

Source: City of West Jordan, Utah

PROJECTED NEED FOR FIRE VEHICLES AND APPARATUS

Figure 27 depicts projected demand for fire vehicles and apparatus over the next six years. Demand from population and nonresidential growth will require the addition of 0.29 vehicles/apparatus for a total cost of $202,074 over the next six years (0.29 vehicles/apparatus X $686,000 average cost per vehicle/apparatus).

Figure 27. Fire Station Needs Analysis

Vehicle/Apparatus LOS - Nonres.		0.00009	vehicles/apparatus per job
Vehicle/Apparatus Cost		$686,000	per vehicle/apparatus
			Infrastructure Needed
	Year	Jobs	Vehicles/Apparatus Nonresidential
Base	2015	26,236	2.36
Year 1	2016	26,781	2.41
Year 2	2017	27,326	2.46
Year 3	2018	27,871	2.51
Year 4	2019	28,416	2.56
Year 5	2020	28,962	2.61
Year 6	2021	29,507	2.66
	Six-Year Increase =>	3,271	0.29
Total Growth-Related Cost of Vehicles/Apparatus =>			**$202,074**

FIRE STATION 54 COST RECOVERY

In 2013, West Jordan issued a Sales and Use Tax to finance its new fire station, Station 54. This portion of the Fire impact fee will be used to cover new development's share of the Station 54 debt service payments. Because the City will not pay the growth share of debt service with sales tax revenue, a revenue credit for future sales and use taxes is not applicable.

Station 54 is an expanded station that replaced the City's existing fourth fire station, which had been built by volunteers in 1980 and no longer met code. The new 14,619 square foot station also has a police substation of approximately 5,841 square feet (40% of total square footage). Because the old Station 54 was no longer useable, it is not considered a component of the City's level of service for fire infrastructure. Therefore, its square footage is not credited against the new fire square footage, and the cost of constructing all 8,779 square feet (14,619 total square feet – 5,841 police square feet) of Station 54 devoted to fire services (60%) is eligible for consideration in the cost recovery calculation. Future debt service for Station 54, as shown in Figure 28, totals $1,785,790.

Figure 28. Station 54 Remaining Debt Service

Sales Tax Revenue Bonds, Series 2013

Year	*Principal Payments*
FY 16-17	$222,646
FY 17-18	$221,420
FY 18-19	$223,093
FY 19-20	$221,661
FY 20-21	$223,128
FY 21-22	$224,457
FY 22-23	$225,649
FY 23-24	$223,736
Total	$1,785,790

As shown in Figure 29, a 14.7 percent growth share adjusts total debt service to the amount attributable to new development. The growth share is based on the increase in population and jobs from 2015 to 2024, which is the year of the final debt payment (1 – (106,021 population + 26,236 jobs) / (123,968 population + 31,142 jobs)).

Figure 29. Station 54 Cost Allocation

Name of Debt Obligation	Growth Share*	FY of Final Payment	Growth Cost	Population Increase 2015-2024	Job Increase 2015-2024
Series 2013	14.7%	2023-24	$263,105	17,946	4,906

** Growth Share formula is 1-(Population and Jobs in 2015/Population and Jobs in 2025)*

IMPACT FEE FACILITIES PLAN

This Impact Fee Facilities Plan establishes projects that should be completed in the near-term based on discussions with City staff. There are no new fire stations in the City's capital plans. However, the City plans to use impact fee revenues to cover the growth-related portion of Station 54 debt service. Additionally, the City intends to continue to expand its fire vehicle and apparatus fleet. The Fire Impact Fee Facilities Plan is shown in Figure 30.

Figure 30. Summary of Fire Impact Fee Facilities Plan

Project	Past Years	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	Total
Station 54 Debt	$0	$33	$33	$33	$33	$33	$33	**$197**
Vehicles	$0	$34	$34	$34	$34	$34	$34	**$202**
Total	$0	$66	$66	$67	$66	$67	$67	**$399**

FUNDING STRATEGY FOR FIRE INFRASTRUCTURE

The cash flow summary for fire infrastructure shown in Figure 31 indicates impact fee revenue and expenditures necessary to meet the demand for growth-related fire facilities. As indicated in Figure 31, fire impact fees are projected to yield a revenue stream that averages $64,000 per year. Vehicle/apparatus expenditures are represented incrementally and Station 54 debt service attributed to growth is shown as the growth share of each annual debt service payment. To the extent the rate of development either accelerates or slows down, there will be a corresponding change in the impact fee revenue and capital costs.

Figure 31. Cash Flow Summary for Fire

	Year =>	1	2	3	4	5	6	*Cumulative*	*Average*
(2015$ in thousands)	2015	2016	2017	2018	2019	2020	2021	*Total*	*Annual*
REVENUES									
Fire Fee-SF		$14	$14	$14	$14	$14	$17	$88	$15
Fire Fee-MF		$4	$4	$4	$4	$4	$4	$22	$4
Fire Fee-Retail/Rest.		$13	$13	$13	$13	$13	$13	$79	$13
Fire Fee-All Other Serv.		$12	$12	$12	$12	$12	$12	$69	$12
Fire Fee-Industrial		$21	$21	$21	$21	$21	$21	$127	$21
Fire Impact Fees		*$64*	*$64*	*$64*	*$64*	*$64*	*$67*	*$385*	*$64*
CAPITAL COSTS									
Station 54 Debt		$33	$33	$33	$33	$33	$33	$197	$33
Vehicles/Apparatus		$34	$34	$34	$34	$34	$34	$202	$34
Fire Capital Cost		*$66*	*$66*	*$67*	*$66*	*$67*	*$67*	*$399*	*$66*
NET CAPITAL FACILITIES CASH FLOW - Fire									
Annual Surplus or (Deficit)		($3)	($3)	($3)	($3)	($3)	($0)	($14)	($2)
Cumulative Surplus or (Deficit)		($3)	($5)	($8)	($11)	($14)	($14)		

Police Impact Fee Facilities Plan

West Jordan has determined that past and future growth is placing demands on the various services and facilities provided by the City, including police services and facilities. Residential and nonresidential growth will continue to create a need for additional station space.

POLICE FUNDING SOURCES

The City has studied various ways of providing the funding police facilities. The sources of revenue for police are General Fund revenues, bonds, or impact fees. In examining the allocation of the costs borne in the past and to be borne in the future and the benefits already received and yet to be received, the City has determined that impact fees are the most equitable way of financing growth-related police facilities.

POLICE STATION LEVELS OF SERVICE STANDARDS

The West Jordan Justice Center is the main law enforcement facility in the City. Additional administrative offices handle responsibilities not associated with law enforcement services, and, therefore, will not be included in the law enforcement fee calculation. The Police Department also staffs space in a substation at Station 54, as described above in the Fire section. The Department projects need for additional storage and office space in the near future.

The total square footage of the West Jordan Justice Center is 48,000 square feet. Of this space, 42,196 square feet (88 percent) are used for police functions. As mentioned above, the additional square footage is allocated for functions not related to police services, such as Justice Courts, and is not included in the police impact fee calculation. Of the 14,619 square feet a Station 54, 5,841 square feet (40%) is devoted to the police substation.

Figure 32 indicates current employment base, residential/nonresidential proportionate share factors, and current LOS standards. The current residential LOS is derived by multiplying the total square footage of the West Jordan Justice Center and Station 54 (used for law enforcement functions) by the residential proportionate share derived from a functional population analysis and dividing by the 2015 population (48,037 sq. ft. X 90% proportionate share / 106,021 persons), resulting in a LOS of 0.41 sq. ft. per person. Similarly, nonresidential LOS is derived by multiplying total square footage by the nonresidential functional population proportionate share analysis and dividing by total nonresidential vehicle trips (48.037 sq. ft. X 10% proportionate share / 83,307 vehicle trips), resulting in LOS of 0.06 sq. ft. per nonresidential vehicle trip.

Figure 32. Current Level of Service for Police Facilities

Site	Current Sq. Ft.	Police Square Footage
West Jordan Justice Center	48,000	42,196
Station 54 Substation	14,619	5,841
	Total Sq. Ft.	**48,037**

Cost per Sq. Ft. for New Station[1] ==> $230

Land Use Type	Proportionate Share	2015 Demand Units	Sq. Ft. per Demand Unit
Residential	90%	106,021 Population	0.41
Nonresidential	10%	83,307 Vehicle Trips	0.06

Source: City of West Jordan, Utah

PROJECTED NEED FOR POLICE STATION SPACE

Figure 33 depicts projected demand for law enforcement space over the next six years. Demand from population and nonresidential growth will require 5,268 square feet of new law enforcement space for a total cost of $1,211,640 over the next six years. Residential growth demand will require 4,669 square feet of new space while nonresidential demand will require 599 square feet over the next six years.

Figure 33. Police Facility Need Analysis

Police Building Space - Residential	0.41 SF per Person
Police Building Space - Nonresidential	0.06 SF per Trip
Police Building Cost	$230 per SF

		West Jordan		Infrastructure Needed		
	Year	Population	NonRes Vehicle Trips	Police SF Residential	Police SF Non Residential	Total Police SF
Base Year	2015	106,021	83,307	43,236	4,801	48,037
Year 1	2016	107,878	85,038	43,993	4,901	48,894
Year 2	2017	109,734	86,769	44,750	5,000	49,750
Year 3	2018	111,591	88,500	45,507	5,100	50,607
Year 4	2019	113,447	90,231	46,264	5,200	51,464
Year 5	2020	115,304	91,962	47,021	5,300	52,321
Year 6	2021	117,470	93,693	47,905	5,400	53,305
Six-Year Increase =>		11,449	10,386	4,669	599	5,268
Total Growth-Related Cost of Police Facilities =>					**$1,211,640**	

IMPACT FEE FACILITIES PLAN

This Impact Fee Facilities Plan establishes projects that should be completed in the near-term based on discussions with City staff. Discussions with staff reveal that the Police Department is currently exploring options for expanding its office facilities, including expanding into underutilized portions of the Justice Center and/or constructing or rehabilitating a structure for a centralized police building. This additional space will be needed within the next six years. In fact, the Department currently has approximately 110 sworn officers and needs somewhere between 130 and 140 officers to be fully staffed, but is already at

capacity. However, because this project does not have a firm start date, the summary of police impact fee projects in Figure 34 represents facility needs concurrently with development over the next six years.

Figure 34. Summary of Police Impact Fee Facilities Plan

Project	Past Years	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	Total
Police Building	$0	$197	$197	$197	$197	$197	$226	**$1,212**
Total	$0	$197	$197	$197	$197	$197	$226	**$1,212**

FUNDING STRATEGY FOR POLICE INFRASTRUCTURE

The cash flow summary for police infrastructure shown in Figure 35 indicates impact fee revenue and expenditures necessary to meet the demand for growth-related police facilities. As indicated in Figure 35, police impact fees are projected to yield a revenue stream that averages $124,000 per year. Costs will exceed impact fee revenue over the six years due to the need for the presence of the debt service credit in the impact fee. To the extent the rate of development either accelerates or slows down, there will be a corresponding change in the impact fee revenue and capital costs.

Figure 35. Cash Flow Summary for Police

	Year =>	1	2	3	4	5	6	*Cumulative*	*Average*
(2015$ in thousands)	2015	2016	2017	2018	2019	2020	2021	*Total*	*Annual*
REVENUES									
Police Fee-SF		$85	$85	$85	$85	$85	$99	$526	$88
Police Fee-MF		$21	$21	$21	$21	$21	$24	$129	$21
Police Fee-Retail/Rest.		$10	$10	$10	$10	$10	$10	$58	$10
Police Fee-All Other Serv.		$3	$3	$3	$3	$3	$3	$20	$3
Police Fee-Industrial		$2	$2	$2	$2	$2	$2	$9	$2
Police Impact Fees		*$121*	*$121*	*$121*	*$121*	*$121*	*$138*	*$742*	*$124*
CAPITAL COSTS									
Police Building Cost		$197	$197	$197	$197	$197	$226	$1,212	$202
Police Capital Cost		*$197*	*$197*	*$197*	*$197*	*$197*	*$226*	*$1,212*	*$202*
NET CAPITAL FACILITIES CASH FLOW - Police									
Annual Surplus or (Deficit)		($76)	($76)	($76)	($76)	($76)	($88)	($470)	($78)
Cumulative Surplus or (Deficit)		($76)	($153)	($229)	($305)	($382)	($470)		

Water Impact Fee Facilities Plan

West Jordan City has determined that the growth within the City is placing demands on various services provided by the City, including the water system. The City is expected to continue to grow in population from approximately 106,000 in 2015 to approximately 148,000 people by 2030. Demand for the City's water system is projected to increase from 17.3 million to 25 million gallons per day over the next twenty years (see Impact Fee Study published under separate cover). Due to this expansive growth, the City will need to make incremental expansions to the water system over the same time frame.

WATER FUNDING SOURCES

The City has studied various ways of providing the funding for water facilities. West Jordan City funds operations and capital maintenance through rates and relies heavily on impact fees to fund growth-related capital needs. In comparing an equitable allocation of the costs borne in the past and to be borne in the future, as well as the benefits already received and yet to be received, the City has determined that impact fees are the most equitable way of financing the growth-related water facilities.

It should be noted that private interests often provide resources for water improvements. Developers often participate in the construction of distribution lines adjacent or within their developments for which they receive a discounted impact fee rate or enter into a development agreement for repayment through collection of future impact fees.

EXISTING LEVELS OF SERVICE FOR WATER SYSTEM

The West Jordan City water distribution network is made up of a variety of components including pumps, storage facilities, valves, and pipes. The City water system must be capable of responding to daily and seasonal variations in demand while concurrently providing adequate capacity for firefighting and other emergency needs. In order to meet these goals, each of the distribution system components must be designed and operated properly. Furthermore, careful planning is required in order to ensure that the distribution system is capable of meeting the City's needs over the next several decades.

The West Jordan City water system has been designed with the LOS required by the Utah Division of Drinking Water. Future water needs in the *Drinking Water System Master Plan Update*, prepared by Hansen, Allen, & Luce Inc. (November 2015), were estimated by identifying locations where development is expected and adding the incremental increase in water demand associated with the development to the current demand.

Although the City's water system has been designed to meet certain mandated demand criteria, the impact fees are calculated based on actual consumption rather than peak demand criteria. Water use by current customers was determined from the City's utility billing records. The number of water customers and use for 2015 is shown in Figure 36. Single family water demand is currently averaging 492 gallons per day per customer; multifamily units average 218 gallons per day per customer. Based on an average of

3.55 and 2.03 persons per housing unit, respectively, the City's LOS for water for single family units is 139 gallons of drinking water per person on an average day and 107 gallons for multifamily units. Nonresidential water demand is currently averaging 5,042,225 gallons per day. Based on the 1,464 current nonresidential customers, the City's LOS for water for nonresidential development is 3,444 gallons of drinking water per connection on an average day.

Figure 36. Water System Demand Factors

Unit Type	*Gallons/Day*	*Units/ Customers*	*Gallons/ Unit or Customer*	*Gallons Per Day Per Capita*
Single Family	10,465,107	21,252	492	139
Multifamily	1,788,688	8,204	218	107
Nonresidential	5,042,225	1,464	3,444	
Total	17,296,019	30,920	559	

Source: City of West Jordan Public Works

IMPACT FEE FACILITIES PLAN

This Impact Fee Facilities Plan establishes growth-related projects that should be completed in the near-term based on the *Drinking Water System Master Plan Update*, prepared by Hansen, Allen, & Luce Inc. (November 2015) and subsequent capital improvement planning conducted by City staff. This Impact Fee Facilities Plan indicates the total cost of water projects the City plans to use impact fees to fully or partially fund. As Figure 37 indicates, the total cost of these projects is $23.3 million.

Figure 37. Summary of Water Impact Fee Facilities Plan

Project	Past Years	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	Total
Veterans Park Well Replacement	$0	$454	$0	$0	$0	$0	$0	**$454**
Drill Exploratory Wells (2)	$0	$200	$0	$0	$0	$0	$0	**$200**
Well 6 - Generator & Upgrades	$0	$300	$0	$0	$0	$0	$0	**$300**
New U-111 well & pump house	$0	$1,620	$0	$0	$0	$0	$0	**$1,620**
New Terminal well & pump house	$0	$1,620	$0	$0	$0	$0	$0	**$1,620**
Terminal Reservoir Property, Design, and Construction	$0	$0	$2,205	$2,205	$0	$0	$0	**$4,410**
Z3 North ReservoirDesign, Property, and Construction	$0	$0	$0	$2,085	$2,085	$0	$0	**$4,170**
OBH Z3 Reservoir Design and Construction	$0	$0	$0	$0	$2,550	$2,550	$0	**$5,100**
Z5 North ReservoirDesign	$0	$0	$0	$0	$0	$200	$0	**$200**
NBH Transmission Project	$0	$0	$0	$905	$0	$0	$0	**$905**
16 inch Zone 3 Transmission WL	$0	$0	$0	$950	$0	$0	$0	**$950**
OBH Transmission Project	$0	$0	$0	$0	$3,376	$0	$0	**$3,376**
Total	$0	$4,194	$2,205	$6,145	$8,011	$2,750	$0	$23,305

FUNDING STRATEGY FOR WATER SYSTEM IMPROVEMENTS

The cash flow summary shown in Figure 38 provides an indication of the water impact fee revenue and expenditures necessary to meet the demand for system improvements over the next six years. Water impact fee revenue averages $1.5 million annually over the six years (cumulative total of $9 million). Water improvements will require an average annual expenditure of approximately $3.9 million (a cumulative six-year total of $23.3 million). Infrastructure expenditures exceed water impact fee revenue

by a cumulative total of $14.3 million over the six-year period, since fee revenue only represents the growth share of the IFFP attributable to growth.

Revenue projections shown below assume implementation of the proposed water impact fees listed above. To the extent the rate of development either accelerates or slows down, there will be a corresponding change in the impact fee revenue.

Figure 38. Cash Flow Summary for Water

	Year =>	1	2	3	4	5	6	*Cumulative*	*Average*
(2015$ in thousands)	2015	2016	2017	2018	2019	2020	2021	*Total*	*Annual*
REVENUES									
Water Fee-SF		$932	$932	$932	$932	$932	$1,088	$5,750	$958
Water Fee-MF		$177	$400	$400	$400	$400	$466	$2,242	$374
Water Fee-Retail/Rest.		$53	$53	$53	$53	$53	$53	$318	$53
Water Fee-All Other Serv.		$70	$70	$70	$70	$70	$70	$419	$70
Water Fee-Industrial		$52	$52	$52	$52	$52	$52	$313	$52
Water Impact Fees		*$1,284*	*$1,507*	*$1,507*	*$1,507*	*$1,507*	*$1,729*	*$9,042*	*$1,507*
CAPITAL COSTS									
Water IFFP		$4,194	$2,205	$6,145	$8,011	$2,750	$0	$23,305	$3,884
Water Capital Cost		*$4,194*	*$2,205*	*$6,145*	*$8,011*	*$2,750*	*$0*	*$23,305*	*$3,884*
NET CAPITAL FACILITIES CASH FLOW - Water									
Annual Surplus or (Deficit)		($2,909)	($698)	($4,638)	($6,504)	($1,243)	$1,729	($14,263)	($2,377)
Cumulative Surplus or (Deficit)		($2,909)	($3,607)	($8,245)	($14,749)	($15,992)	($14,263)		

Wastewater Impact Fee Facilities Plan

West Jordan City has determined that the growth within the City is placing demands on various services provided by the City, including the wastewater system. The City is expected to continue to grow in population from approximately 106,000 in 2015 to approximately 148,000 people by 2030. Demand for the City's wastewater system is projected to increase from 8.5 million to 12.25 million gallons per day over the next twenty years (see Impact Fee Study published under separate cover). Due to this expansive growth, the City will need to make incremental expansions to the wastewater system over the same time frame.

WASTEWATER FUNDING SOURCES

The City has studied various ways of providing the funding for wastewater facilities. West Jordan City funds operations and capital maintenance through rates and relies heavily on impact fees to fund growth-related capital needs. In comparing an equitable allocation of the costs borne in the past and to be borne in the future, as well as the benefits already received and yet to be received, the City has determined that impact fees are the most equitable way of financing the growth-related wastewater facilities.

It should be noted that private interests often provide resources for wastewater improvements. Developers often participate in the construction of collection lines adjacent or within their developments for which they receive a discounted impact fee rate or enter into a development agreement for repayment through collection of future impact fees.

EXISTING LEVELS OF SERVICE FOR WASTEWATER SYSTEM

The West Jordan City wastewater system is made up of a variety of components including pumps, treatment facilities, meters, and pipes. The City's wastewater system must be capable of responding to daily and seasonal variations in demand. In order to meet these goals, each of the distribution system components must be designed and operated properly.

The existing piping system capacity is generally adequate under current demand conditions. However, there are a few areas that are overcapacity or approaching overcapacity and need relief. Modeled system capacity and calculated existing system flows for each pipe in the model were used to develop the Impact Fee Facilities Plan.

The City does not differentiate between water and sewer customers. Since water and sewer consumption typically correlate, TischlerBise used the average daily sewer flow at the South Valley Water Reclamation Facility (SVWRF), which serves West Jordan City, to scale water demand by land use type metrics described in Figure 30 above to sewer demand. The average daily sewer flow at SVWRF is 8.5 million gallons. Thus, the water demand breakdown is used to allocate the 8.5 million gallons to single family, multifamily, and nonresidential development. Customer counts remain the same.

Demand calculations are shown in Figure 39. Average daily demand of 275 gallons per day per connection, including 242 gallons per single family unit and 107 gallons per multifamily unit. Per capita gallons per day for residential unit is also shown in Figure 39 and total 68 gallons per day for single family units and 53 gallons per capita for multifamily.

Figure 39. Wastewater System Demand Factors

Unit Type	*Gallons/Day**	*Water Demand Breakdown*	*Units/ Customers*	*Gallons/ Unit or Customer*	*Gallons Per Day Per Capita*
Single Family	5,142,999	0.61	21,252	242	68
Multifamily	879,037	0.10	8,204	107	53
Nonresidential	2,477,964	0.29	1,464	1,693	
Total	8,500,000		30,920	275	

*Total gallons/day figure provided by City of West Jordan Public Works; demand is divided among unit type using water demand percentages

SVWRF COST RECOVERY

In 2005, West Jordan issued a Water Revenue Bond to finance a 7.52 million gallon per day (MGD) addition to the South Valley Water Reclamation Facility (SVWRF), a 50 MGD wastewater treatment plant. This bond was refinanced in 2014. In total, the City's portion of SVWRF will cost approximately $30.2 million (Figure 40). This portion of the wastewater impact fee will be used to cover new development's share of the SVWRF debt service payments.

Figure 40. SVWRF Remaining Debt Service

Series 2005 (Refunded in 2014)

Year	*Principal & Interest**
2006	$467,001
2007	$821,046
2008	$928,675
2009	$983,313
2010	$1,026,313
2011	$1,092,125
2012	$1,140,125
2013	$1,184,975
2014	$1,226,975
2015	$626,667
2016	$1,362,813
2017	$1,377,013
2018	$1,380,613
2019	$1,377,013
2020	$1,382,213
2021	$1,379,013
2022	$1,377,763
2023	$1,379,263
2024	$1,378,263
2025	$1,379,763
2026	$1,383,513
2027	$1,382,963
2028	$1,381,363
2029	$1,382,144
2030	$1,380,056
Total	***$30,180,976***

**Payments from both original and refunded debt service schedules*

To calculate the cost per gallon of treatment capacity, TischlerBise divided the total cost of the City's debt ($30,180,876) by the total gallons of capacity in West Jordan's purchased share of the SVWRF (7,520,000), yielding a total cost per gallon of treatment of $4.01. Based on the City's expected usage over the next six years, this impact fee will generate $4.2 million in revenue (Figure 40).

Figure 41. SVWRF Cost Allocation

SVWRF Cost Recovery	
Total West Jordan Debt	$30,180,976
Purchased Capacity (MGD)	7.52
Cost per Gallon of Treatment	**$4.01**
Projected Impact Fee Revenue (2015-2021)	$4,232,750

IMPACT FEE FACILITIES PLAN

This Impact Fee Facilities Plan establishes growth-related projects that should be completed in the near-term based on the *Sanitary Sewer Master Plan* prepared by the West Jordan City Engineering Division of the Public Works Department (December 2012) and subsequent capital improvement planning conducted by City staff. It also identifies debt service payments for over-sized wastewater capacity. This Impact Fee Facilities Plan indicates the total cost of wastewater projects and debt service the City plans to use impact fees to fully or partially fund. As Figure 42 indicates, the total cost of these projects is $12.1 million.

Figure 42. Summary of Wastewater Impact Fee Facilities Plan

Project	Past Years	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	Total
TOD 18" Pipeline OBH upsize	$0	$105	$0	$0	$0	$0	$0	**$105**
Wells Park Rd. Upgrade (pipe burst)	$0	$500	$0	$0	$0	$0	$0	**$500**
7000 South Upgrades 1905 W to 3200 W	$0	$1,950	$0	$0	$0	$0	$0	**$1,950**
1300 West Pipe Burst Sewer upgrade	$0	$0	$1,080	$0	$0	$0	$0	**$1,080**
Mountain Meadow Pipe Upsize	$0	$0	$75	$0	$0	$0	$0	**$75**
Upsize Pipe in Center Park, Campus View	$0	$0	$1,071	$0	$0	$0	$0	**$1,071**
Wells Park and Hawley Park Upgrades	$0	$0	$0	$0	$0	$1,675	$0	**$1,675**
9000 S - 30 inch upgrade (610LF) 1100 W	$0	$0	$0	$0	$0	$500	$0	**$500**
SVWRF Future Debt Service Payments	$0	$790	$820	$840	$870	$910	$925	**$5,155**
Total	$0	$3,345	$3,046	$840	$870	$3,085	$925	**$12,111**

FUNDING STRATEGY FOR WASTEWATER SYSTEM IMPROVEMENTS

The cash flow summary shown in Figure 43 provides an indication of the projected wastewater impact fee revenue and expenditures necessary to meet the demand for system improvements over the next six years. Wastewater impact fee revenue averages $1.1 million annually over the six years (cumulative total of $6.9 million). Wastewater improvements will require an average annual expenditure of approximately $1.9 million (a cumulative six-year total of $11.2 million). Infrastructure expenditures exceed wastewater impact fee revenue by a cumulative total of $4.3 million over the six-year period, since fee revenue only represents the share of the IFFP costs attributable to growth.

Revenue projections shown below assume implementation of the proposed wastewater impact fees listed above. To the extent the rate of development either accelerates or slows down, there will be a corresponding change in the impact fee revenue.

Figure 43. Cash Flow Summary for Wastewater

	Year =>	1	2	3	4	5	6	*Cumulative*	*Average*
(2015$ in thousands)	2015	2016	2017	2018	2019	2020	2021	*Total*	*Annual*
REVENUES									
Wastewater Fee-SF		$811	$811	$811	$811	$811	$946	$5,002	$834
Wastewater Fee-MF		$154	$154	$154	$154	$154	$180	$949	$158
Wastewater Fee-Retail/Rest.		$46	$46	$46	$46	$46	$46	$276	$46
Wastewater Fee-All Other Serv.		$61	$61	$61	$61	$61	$61	$365	$61
Wastewater Fee-Industrial		$45	$45	$45	$45	$45	$45	$273	$45
Wastewater Impact Fees		*$1,117*	*$1,117*	*$1,117*	*$1,117*	*$1,117*	*$1,278*	*$6,864*	*$1,144*
CAPITAL COSTS									
Wastewater IFFP		$0	$3,345	$3,046	$840	$870	$3,085	$11,186	$1,864
Wastewater Capital Cost		*$0*	*$3,345*	*$3,046*	*$840*	*$870*	*$3,085*	*$11,186*	*$1,864*
NET CAPITAL FACILITIES CASH FLOW - Wastewater									
Annual Surplus or (Deficit)		$1,117	($2,228)	($1,929)	$277	$247	($1,807)	($4,322)	($720)
Cumulative Surplus or (Deficit)		$1,117	($1,110)	($3,039)	($2,762)	($2,515)	($4,322)		

Storm Drainage Impact Fee Facilities Plan

West Jordan City has determined that the growth within the City is placing demands on various services provided by the City, including the storm drainage system. The City is expected to continue to grow from a population of approximately 106,000 in 2015 to approximately 117,500 people by the year 2021 and 137,000 by 2030. Due to this expansive population growth, as well as continued nonresidential development, the City will need to make expansions to the storm drainage system over the same time period to accommodate storm water runoff.

STORM DRAINAGE FUNDING SOURCES

The City has studied various ways of providing the funding for storm drainage facilities. West Jordan City funds operations and capital maintenance through a storm drainage utility fee, but the City relies heavily on impact fees to fund growth-related capital needs. In analyzing the costs borne in the past and to be borne in the future to the benefits already received and yet to be received, the City has determined that impact fees are the most equitable way of financing the growth-related storm drainage facilities.

In addition, private interests provide resources for storm drainage improvements. Developers frequently participate in the construction of detention basins and other storm drainage infrastructure adjacent to or within their development. In return, they receive a discounted impact fee rate or enter into a development agreement for repayment through collection of future impact fees.

EXISTING LEVELS OF SERVICE FOR STORM DRAINAGE SYSTEM

The storm drainage system consists of all gutters, grates, detention ponds, storm inlets, pipes, culverts and any drainage system used to collect rainwater and snowmelt and deliver it to appropriate streams in order to prevent flooding and property damage throughout the City.

The improvements identified in this Impact Fee Facility Plan and accompanying Impact Fee Study are based on a modeling effort completed as part of the West Jordan, Utah *Storm Drainage Master Plan* (Hansen, Allen, Luce, Inc., November 2015). The process for evaluating the adequacy of existing facilities and needed improvements included:

- Modelling infiltration by perviousness and soil type (determined by existing and future land use), existing conveyances (including pipes, box culverts, ditches, canals, natural channels, outlet pipes, orifice plates, weirs, pumps, and in some cases gutters), and nodes (manholes, inlets, outfalls, dividers, and detention basins) by subbasin area using InfoSWMM software;
- Determining 10-year and 100-year rainfall amounts for the Great Basin Experimental Area;
- Identifying existing system deficiencies; and
- Determining future capital improvements through a detailing engineering process that evaluated multiple alternatives wherein all infrastructure was designed to accommodate a 10-year storm

minimum capacity and infrastructure in areas where homes may be frequently flooded and regional detention basins were designed to accommodate a 100-year storm.

COST RECOVERY ON CULVERT PROJECT

In addition to the planned trunkline and detention projects shown in the IFFP below, the storm drainage fee includes a cost recovery component on the 400 West Bingham Creek project. This culvert project, completed between 2013 and 2015, carried a total cost of $525,000. Storm drainage modelling efforts indicated that 30 percent of these costs were growth-related, yielding a total impact fee basis of $157,500. This total is included in the IFFP shown in Figure 44.

IMPACT FEE FACILITIES PLAN

This Impact Fee Facilities Plan establishes growth-related projects that should be completed in the next six years based on capital planning as a result of the most recently adopted West Jordan, Utah *Storm Drainage Master Plan*, prepared by Hansen, Luce, Allen Inc. (November 2015). This Impact Fee Facilities Plan includes storm drainage projects the City plans to use impact fees to fully or partially fund. As Figure 44 indicates, the total cost of these projects is approximately $6.8 million.

Figure 44. Summary of Storm Drainage Impact Fee Facilities Plan

Project	Past Years	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	Total
Trunklines								
7000 S - 4600 W to Airport Rd (24 inch)	$0	$275	$0	$0	$0	$0	$0	**$275**
7000 South 60 inch trunkline	$0	$450	$100	$0	$0	$0	$0	**$550**
Executive Drive - 7265 S to Richland Circle	$0	$82	$82	$0	$0	$0	$0	**$163**
Harvest Ridge Dr. - 7400 S & Jordan Meadows	$0	$0	$0	$0	$18	$0	$0	**$18**
8660 South & 1841 West (Cajean Estates)	$0	$0	$0	$0	$150	$0	$0	**$150**
OBH to Bingham Creek pipeline	$0	$0	$0	$0	$0	$599	$0	**$599**
Detention Basins								
Constitution Park detention expansion	$0	$910	$350	$0	$0	$0	$0	**$1,260**
Relocate Barney's Wash Detention Pond	$0	$600	$0	$0	$0	$0	$0	**$600**
Barney's Wash (Terminal) Detention (design and construction)	$0	$0	$80	$1,000	$0	$0	$0	**$1,080**
Barney's Creek West Detention (design and construction)	$0	$0	$1,900	$0	$0	$0	$0	**$1,900**
Culverts								
Cost Recovery on Culvert	$199	$0	$0	$0	$0	$0	$0	**$199**
Total	***$199***	***$2,317***	***$2,511***	***$1,000***	***$168***	***$599***	***$0***	***$6,793***

FUNDING STRATEGY FOR STORM DRAINAGE SYSTEM IMPROVEMENTS

The cash flow summary shown in Figure 45 provides an indication of the projected storm drainage impact fee revenue and expenditures necessary to meet the demand for system improvements over the next six years. Storm drainage impact fee revenue averages $1.1 million annually over this period (cumulative total of $6.7 million). Storm drainage improvements will require an average annual expenditure of approximately $1.1 million (a cumulative six-year total of $6.6 million). Please note that the $158,000 growth share for the culvert cost recovery is not included in the cash flow summary (since it is a past expenditure) but is a fee component.

Revenue projections shown below assume implementation of the proposed storm drainage impact fees listed above. To the extent the rate of development either accelerates or slows down, there will be a corresponding change in the impact fee revenue.

Figure 45. Cash Flow Summary for Storm Drainage

	Year =>	1	2	3	4	5	6	*Cumulative*	*Average*
(2015$ in thousands)	2015	2016	2017	2018	2019	2020	2021	*Total*	*Annual*
REVENUES									
Storm Drainage Fee-SF		$626	$626	$626	$626	$626	$731	$3,862	$644
Storm Drainage Fee-MF		$169	$169	$169	$169	$169	$198	$1,044	$174
Storm Drainage Fee-Retail/Rest.		$147	$147	$147	$147	$147	$147	$882	$147
Storm Drainage Fee-All Other Serv.		$84	$84	$84	$84	$84	$84	$506	$84
Storm Drainage Fee-Industrial		$65	$65	$65	$65	$65	$65	$392	$65
Storm Drainage Impact Fees		*$1,092*	*$1,092*	*$1,092*	*$1,092*	*$1,092*	*$1,225*	*$6,686*	*$1,114*
CAPITAL COSTS									
Storm Drainage IFFP		$2,317	$2,511	$1,000	$168	$599	$0	$6,595	$1,099
Storm Drainage Capital Cost		*$2,317*	*$2,511*	*$1,000*	*$168*	*$599*	*$0*	*$6,595*	*$1,099*
NET CAPITAL FACILITIES CASH FLOW - Storm Drainage									
Annual Surplus or (Deficit)		($1,224)	($1,419)	$92	$925	$493	$1,225	$92	$15
Cumulative Surplus or (Deficit)		($1,224)	($2,643)	($2,551)	($1,626)	($1,133)	$92		

Transportation Impact Fee Facilities Plan

West Jordan City has determined that the growth within the City is placing demands on various services provided by the City, including the transportation system. The City is expected to continue to grow from a population of approximately 106,000 in 2015 to approximately 117,500 people by the year 2021 and 137,000 by 2030. Due to this expansive population growth, as well as continued nonresidential development, the City will need to make expansions to the transportation system over the same time period to accommodate increased system demand.

TRANSPORTATION FUNDING SOURCES

The City has studied various ways of providing the funding for Transportation facilities. Most Utah cities utilize general fund revenues for their transportation programs. Many augment general fund revenue with impact fees. Another option for transportation funding includes the creation of special improvement districts. These districts are organized for the purpose of funding a single specific project that benefits an identifiable group of properties. In many cases, cities utilize bonds for projects that benefit the entire community. In comparing an equitable allocation of the costs borne in the past and to be borne in the future and benefits already received and yet to be received, the City has determined that impact fees are the most equitable way of financing the growth-related Transportation facilities.

Private interests often provide resources for transportation improvements. Developers construct the local streets within subdivisions and often dedicate right-of-way and participate in the construction of collector/arterial streets adjacent to their developments. Developers can also be considered a possible source of funds for projects through the use of impact fees. These fees are assessed as a result of the impacts a particular development will have on the surrounding roadway system, such as the need for traffic signals or street widening.

EXISTING LEVELS OF SERVICE FOR TRANSPORTATION

Within West Jordan City there are currently 7.64 centerline miles of arterial roads, for a total of 38.20 lane miles. These arterial roads and the City's collector system are detailed in Figure 46 below.

Figure 46. Inventory of City Arterials and Collectors as of June 30, 2015

Type	Lanes	Miles	Lane Miles
Major Collectors	2	28.43	56.86
Minor Collectors	3	38.83	116.49
Total Collector Roads		***67.26***	***173.35***
Type	**Lanes**	**Miles**	**Lane Miles**
Arterials	5	7.64	38.20
Total Arterial Roads		***7.64***	***38.20***
Total		**74.9**	**211.55**

Level of Service (LOS) is a traffic engineering term for describing and measuring the level of travel delay experienced by vehicles. LOS ranges from free-flow traffic conditions (LOS A) to extremely congested travel (LOS F). Since traffic and overall travel is generally most congested at morning and afternoon peak periods, typical practice generally allows for some driver discomfort during these peak periods while providing better LOS throughout the remainder of the day. According to the City's *Transportation Master Plan*, the City's transportation network presently operates at a minimum of LOS D on arterial and collector streets.

Figure 47 shows the calibration of existing development to the current City arterial and collector street network. Knowing the current lane miles (211.55), TischlerBise determined the weighted-average trip length of 5.20 using a series of spreadsheet iterations. As shown in Figure 44 below, existing development within West Jordan attracted an estimated 1,644,451 Vehicle Miles of Travel (VMT) on arterials in 2015, based on the trip generation, trip adjustment, trip length factor and other assumptions contained in the Impact Fee Study. Therefore, the current infrastructure standard is 1.29 lane miles per 10,000 vehicle miles of travel (i.e. 211.55 lane miles divided by 1,644,451 VMT expressed in ten-thousands). The impact fee calculation is based on maintaining this LOS with new development and generated trips.

Figure 47. Existing Level of Service on City Arterial and Collector Network

	ITE Code	Dev Type	Weekday VTE	Dev Unit	Trip Adj	Trip Length Wt Factor
R1	210	Single Family	11.00	HU	64%	122%
R2	220	Multifamily	6.50	HU	64%	122%
NR1	857	Retail/Restaurant	42.70	KSF	34%	68%
NR2	710	All Other Services	16.60	KSF	50%	75%
NR3	140	Industrial	3.82	KSF	50%	75%

Avg Trip Length (miles)	**5.20**
Capacity Per Lane	**7,775**
Signalized Intersections	**31**

Year->	*Base*
West Jordan, Utah	*2015*
Single Family HU	25,382
Multifamily HU	7,840
Retail KSF	3,966
Office/Institutional KSF	2,095
Industrial KSF	4,369
Single Family Trips	178,689
Multifamily Trips	32,614
Retail/Restaurant Trips	57,575
All Other Services Trips	17,387
Industrial Trips	8,345
Total Vehicle Trips	294,611
Vehicle Miles of Travel (VMT)	1,644,451
LANE MILES	**211.5**
Lane Miles per 10,000 VMT	1.29
Signalized Intersections	**31.0**
Annual Intersections	
Anl Intersection Cost (millions)	
Signals per 10,000 VMT	**0.19**

IMPACT FEE FACILITIES PLAN

This Impact Fee Facilities Plan establishes projects that should be completed in the near-term based on the most recently adopted *Transportation Master Plan*. This Impact Fee Facilities Plan indicates the total cost of transportation projects the City plans to use impact fees to fully or partially fund. As Figure 48 indicates, the total cost of these projects is $13.8 million. As detailed in the separate Impact Fee Study, the growth-related portion of these costs total $8.5 million.

Figure 48. Summary of Road Impact Fee Facilities Plan

Project	Past Years	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	Total
7800 S: 40-48 W	$0	$2,036	$0	$450	$450	$0	$0	**$2,936**
8600 South: 5600 West to 6000 West (no bridge)	$0	$750	$0	$0	$0	$0	$0	**$750**
7800 S: 13W to U-111	$0	$3,900	$0	$0	$0	$0	$0	**$3,900**
7800 S: 5900 W to 6700 W	$0	$0	$100	$100	$100	$3,449	$0	**$3,749**
Traffic signal installation	$0	$665	$0	$0	$0	$0	$0	**$665**
7000 S Railroad crossing (construction)	$0	$792	$0	$0	$0	$0	$0	**$792**
Traffic signal installation	$0	$0	$175	$0	$0	$0	$0	**$175**
Traffic signal installation	$0	$0	$0	$200	$0	$0	$0	**$200**
Traffic signal installation	$0	$0	$0	$0	$200	$0	$0	**$200**
Traffic signal installation	$0	$0	$0	$0	$0	$200	$0	**$200**
Traffic signal installation	$0	$0	$0	$0	$0	$0	$200	**$200**
Developer Reimbursements	$762	$0	$0	$0	$0	$0	$0	**$762**
Total	$762	$8,143	$275	$750	$750	$3,649	$200	$14,528

FUNDING STRATEGY FOR TRANSPORTATION SYSTEM IMPROVEMENTS

The cash flow summary shown in Figure 49 provides an indication of the transportation impact fee revenue and expenditures necessary to meet the demand for system improvements over the next six years. Transportation impact fee revenue averages $1.57 million annually over the six years (cumulative total of $9.4 million). Road improvements will require an average annual expenditure of approximately $2.3 million (a cumulative six-year total of $13.8 million). Deficits are due to the fact that fees only represent the growth-share of the IFFP. Please note that the $762,000 growth share for developer reimbursements is not included in the cash flow summary (since it is a past expenditure) but is a fee component.

Revenue projections shown below assume implementation of the proposed road impact fees listed above. To the extent the rate of development either accelerates or slows down, there will be a corresponding change in the impact fee revenue.

Figure 49. Cash Flow Summary for Transportation

	Year =>	1	2	3	4	5	6	*Cumulative*	*Average*
(2015$ in thousands)	2015	2016	2017	2018	2019	2020	2021	*Total*	*Annual*
REVENUES									
Trans. Fee-SF		$950	$950	$950	$950	$950	$1,108	$5,856	$976
Trans. Fee-MF		$240	$240	$240	$240	$240	$281	$1,483	$247
Trans. Fee-Retail/Rest.		$214	$214	$214	$214	$214	$214	$1,285	$214
Trans. Fee-All Other Serv.		$71	$71	$71	$71	$71	$71	$428	$71
Trans. Fee-Industrial		$61	$61	$61	$61	$61	$61	$368	$61
Trans. Impact Fees		*$1,537*	*$1,537*	*$1,537*	*$1,537*	*$1,537*	*$1,735*	*$9,421*	*$1,570*
CAPITAL COSTS									
Trans. IFFP		$8,143	$275	$750	$750	$3,649	$200	$13,767	$2,294
Transportation Capital Cost		*$8,143*	*$275*	*$750*	*$750*	*$3,649*	*$200*	*$13,767*	*$2,294*
NET CAPITAL FACILITIES CASH FLOW - Transportation									
Annual Surplus or (Deficit)		($6,606)	$1,262	$787	$787	($2,112)	$1,535	($4,346)	($724)
Cumulative Surplus or (Deficit)		($6,606)	($5,344)	($4,557)	($3,770)	($5,881)	($4,346)		