



Development Impact Fees

Parks, Municipal Power, Public Safety, and Roads

Spanish Fork, Utah

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Prepared by:



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Impact Fee Summary For Lay Persons

Impact fees are one-time payments used to construct system improvements needed to accommodate development. Impact fees for Spanish Fork City are proportionate and reasonably related to the capital facility service demands of new development. Impact fees are necessary to achieve an equitable allocation of capital costs, in comparison to past and future benefits. Spanish Fork City has complied with all requirements of Utah's Impact Fees Act.

After discussions with City staff, TischlerBise determined demand indicators for each type of public facility and calculated residential and nonresidential proportionate share factors. These factors are used to allocate costs by type of development. The formulas used to calculate impact fees are diagrammed in a flow chart for each type of public facility. Also contained in this report are summary tables indicating the specific Level-Of-Service (LOS) or infrastructure standards used to derive the impact fees.

There are three basic methods used to calculate the impact fees. The incremental expansion method documents the current LOS for each type of public facility in both quantitative and qualitative measures. This method is best suited for public facilities that will be expanded incrementally in the future, with LOS standards based on current conditions in the community. The plan-based method is best suited for public facilities that have adopted plans or commonly accepted engineering standards to identify the need for capital projects. A cost recovery method may be used for facilities that have been oversized to accommodate future development, at least for the next six years. The rationale for the cost recovery approach is that new development is paying for its share of the useful life or remaining capacity of the existing facility. To the extent that new growth and development is served by the previously constructed improvements, Utah's Impact Fee Act allows the City to be reimbursed for the previously incurred public facility costs [see 11-36-202(3)(b)].

Another general requirement that is common to impact fee methodologies is the evaluation of credits. Past and future revenue credits have been evaluated to avoid potential double payment situations arising from the payment of a one-time impact fee and then subsequent payments of other revenues that may also fund growth-related capital improvements. General Fund revenues, such as property taxes, being used for parks and public safety improvements have been accounted for in credits for future principal payments.

For comparison purposes, Spanish Fork’s current impact fees are shown in Figure 1. The City does not currently collect impact fees for public safety and roads.

Figure 1 - Current Impact Fees

<i>Type of Infrastructure</i>	<i>Single Family</i>	<i>Multifamily</i>	<i>Retail</i>	<i>Office</i>	<i>Industrial</i>
Parks	\$3,418	\$2,984	\$0	\$0	\$0
Municipal Power	\$1,098	\$1,098	\$2,000	\$2,000	\$2,000
Public Safety	\$0	\$0	\$0	\$0	\$0
Roads	\$0	\$0	\$0	\$0	\$0
TOTAL	\$4,516	\$4,082	\$2,000	\$2,000	\$2,000

Figure 2 shows the method used to derive each type of fee, plus each component that contributes to the impact fee. The five impact fees listed below are projected to yield combined revenue averaging \$2.66 million per year for growth-related system improvements over the next six years.

Figure 2 – Fee Methods and Cost Components

<i>Type of Fee</i>	<i>Cost Recovery (past)</i>	<i>Incremental Expansion (present)</i>	<i>Plan-Based (future)</i>	<i>Cost Allocation</i>
1. Parks	Land	Park Improvements	Trails	Population
2. Electric			System Improvements	Avg Day Kilowatt Hours
3. Roads	System Improvements		System Improvements	Average Weekday Vehicle Trips
4. Public Safety	Police Headquarters	Fire Stations		Calls for Service, Population, and Jobs

Figure 3 provides a schedule of the proposed development impact fees for Spanish Fork. Fees for residential are per housing unit and fees for nonresidential are per 1,000 square feet of floor area; except for Municipal Power impact fees that are based on service size.

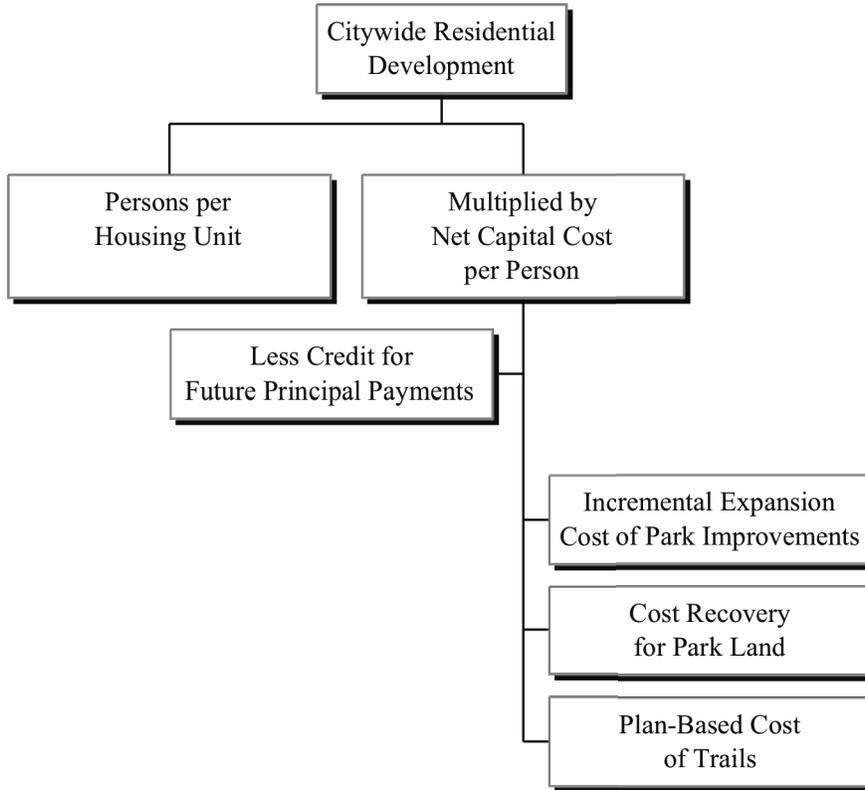
Figure 3 - Proposed Impact Fees

<i>Type of Infrastructure</i>	<i>Single Family</i>	<i>Multifamily</i>	<i>Retail</i>	<i>Office</i>	<i>Industrial</i>
Parks	\$3,546	\$3,309	\$0	\$0	\$0
Municipal Power	\$1,344	\$1,075	\$10,056	\$10,056	\$10,056
Public Safety	\$407	\$380	\$169	\$432	\$233
Roads	\$2,277	\$1,989	\$2,925	\$1,287	\$446
TOTAL	\$7,574	\$6,753	\$13,150	\$11,775	\$10,735

Parks and Recreation

The parks impact fee is derived from incremental expansion, cost recovery, and plan-based components. The methodology for the park impact fee is shown in Figure 11. Cost components are allocated 100% to residential development.

Figure 11 – Park Impact Fee Methodology



Infrastructure Standards for Parks

As shown in Figure 12, impact fees will be used to make improvements at larger parks with a citywide service area. Spanish Fork currently has 192.1 acres of improved parks, equal to 5.9 acres per 1,000 residents. The cost of park improvements, at \$150,000 per acre, is from Table 5A in Spanish Fork’s 2008 update of the Parks, Recreation, and Trails Master Plan.

Figure 12 – Incremental Expansion Cost of Park Improvements

<i>Site</i>	<i>Improved Acres</i>	<i>Total Acres</i>
Sports Park	80.0	93.0
Fairgrounds	31.0	31.0
Canyon View Park	25.0	25.0
Russell Swenson Complex	18.2	18.2
Centennial Park	11.5	11.5
North Park	9.8	9.8
East (Skate) Park	8.5	8.5
Camp Ground	4.5	149.5
City Library Park	3.6	3.6
Future Park Site		45.0
Urban Forest		16.0
TOTAL	192.1	411.1
2009 Spanish Fork Population	32,389	
Improved Acres Per 1,000 Persons	5.9	
Improvements Cost Per Acre	\$150,000	
Citywide Parks Cost per Person	\$889	

Spanish Fork spent approximately \$2.1 million to acquire 45 acres of land to be used for future parks, at an average cost of \$46,700 per acre. Based on the current infrastructure standard shown above, this “surplus” in land for future parks will accommodate projected population growth through 2017.

Figure 13 – Cost Recovery for Land Acquisition

<i>Cost Recovery for Land Acquisition</i>	
Inventory of Park Acres to be Improved	45
Spanish Fork Population in 2017	40,077
Acres Per 1,000 Persons	5.9
Land Cost per Acre	\$46,700
Land Cost per Person	\$276

As shown in Figure 14, Spanish Fork is planning to have 67,200 linear feet of trails by the year 2015, yielding an infrastructure standard of 1.8 linear feet per person. The construction cost of trails is currently averaging \$45 per linear foot.

Figure 14 – Plan-Based Cost of Trails

<i>Site</i>	<i>Linear Feet</i>
100 South	1,600
Dripping Rock	2,600
Justice Center	1,400
North Park Connector	9,500
Oak Ridge Cove	1,300
River/Urban Forest Trail	5,300
Spanish Fork River Trail	22,200
Spanish Fields	1,800
Spanish Highlands	1,800
Sports Park	8,600
Sunny Ridge	4,200
Water Park Connector	6,900
Total	67,200
Spanish Fork Population in 2015	37,999
Linear Feet per Person	1.8
Cost per Linear Foot	\$45
Trails Cost per Person	\$79

Projected Need for Park Facilities

The need for additional park infrastructure, based on projected population growth over the next six years, is shown in Figure 15. Spanish Fork will spend almost \$5 million to improve parks with a citywide service area. Over the next six years, the City will provide 9,921 linear feet of trails costing an estimated \$446,000.

Figure 15 – Park Needs Analysis

<i>Park Standards</i>				
Citywide Parks		5.9	acres per 1,000 persons	
Park Improvements Cost		\$150,000	per acre	
Trails (not along streets)		1.8	linear feet per person	
Trails Cost		\$45	per linear foot	
		<i>Infrastructure Needed</i>		
	<i>Year</i>	<i>Spanish Fork Population</i>	<i>Acres of Citywide Parks</i>	<i>Linear Feet of Trails</i>
Base	FY09-10	32,389	192.1	57,279
Year 1	2010	33,263	197.3	58,825
Year 2	2011	34,160	202.6	60,411
Year 3	2012	35,082	208.1	62,041
Year 4	2013	36,029	213.7	63,716
Year 5	2014	37,001	219.5	65,435
Year 6	2015	37,999	225.4	67,200
<i>Six-Yr Increase</i>		5,610	33.3	9,921
Cost of Park Improvements =>			\$4,995,000	
			Cost of Trails =>	\$446,000

Revenue Credit Evaluation

In 2007, Spanish Fork bond financed the construction of North Park. To avoid potential double payment for park improvements, the park impact fee includes a credit of \$62 per person based on future principal payments. As shown in Figure 16, a discount rate accounts for the time value of the future revenue stream.

Figure 16 – Credit for Principal Payments on Park Bond

<i>Year</i>	<i>Principal Payments*</i>	<i>Projected Population</i>	<i>Principal Payment Per Person</i>
2010	\$154,545	33,263	\$4.65
2011	\$159,091	34,160	\$4.66
2012	\$168,182	35,082	\$4.79
2013	\$172,727	36,029	\$4.79
2014	\$177,273	37,001	\$4.79
2015	\$186,364	37,999	\$4.90
2016	\$195,455	39,024	\$5.01
2017	\$204,545	40,077	\$5.10
2018	\$209,091	41,158	\$5.08
2019	\$222,727	42,269	\$5.27
2020	\$231,818	43,409	\$5.34
2021	\$240,909	44,581	\$5.40
2022	\$250,000	45,783	\$5.46
2023	\$263,636	47,019	\$5.61
2024	\$277,273	48,287	\$5.74
2025	\$290,909	49,590	\$5.87
2026	\$300,000	50,928	\$5.89
Total	\$3,704,545		\$88.36
		Discount Rate	4.00%
		Present Value	\$62

* North Park share of Series 2007 Sales Tax Bonds.

Proposed Impact Fees for Parks

Infrastructure standards used in the park impact fee calculations are listed at the top of Figure 17. The net capital cost of park system improvements is \$1,182 for each resident added to Spanish Fork. The first two rows of the fee schedule indicate the fee for average-size multifamily housing unit. For single-family housing, fee amounts are shown in 100 feet increments. The methodology used to derive average number of persons by floor area is discussed in Appendix A.

Figure 17 – Proposed Park Impact Fees

Infrastructure Costs per Person

Park Improvements	\$889
Land for Parks	\$276
Trails	\$79
Principal Payment Credit	<u>(\$62)</u>
Total	\$1,182

Park Impact Fee Schedule

Unit Type	Square Feet	Persons per Housing Unit	Proposed Fee	Current Fee	Increase (Decrease)
Multifamily	All Sizes	2.8	\$3,309	\$2,984	\$325
Single Family	2499 or less	1.9	\$2,245	\$3,418	(\$1,173)
Single Family	2500-2599	2.1	\$2,482	\$3,418	(\$936)
Single Family	2600-2699	2.4	\$2,836	\$3,418	(\$582)
Single Family	2700-2799	2.6	\$3,073	\$3,418	(\$345)
Single Family	2800-2899	2.8	\$3,309	\$3,418	(\$109)
Single Family	2900-2999	3.0	\$3,546	\$3,418	\$128
Single Family	3000-3099	3.3	\$3,900	\$3,418	\$482
Single Family	3100-3199	3.5	\$4,137	\$3,418	\$719
Single Family	3200-3299	3.7	\$4,373	\$3,418	\$955
Single Family	3300-3399	3.9	\$4,609	\$3,418	\$1,191
Single Family	3400-3499	4.0	\$4,728	\$3,418	\$1,310
Single Family	3500-3599	4.2	\$4,964	\$3,418	\$1,546
Single Family	3600-3699	4.4	\$5,200	\$3,418	\$1,782
Single Family	3700-3799	4.6	\$5,437	\$3,418	\$2,019
Single Family	3800 or more	4.7	\$5,555	\$3,418	\$2,137

Cash Flow Analysis for Parks

The cash flow summary shown in Figure 18 indicates impact fee revenue and expenditures necessary to meet the demand for growth-related park facilities. Assuming the average single-family house has 2900 square feet, park impact fees are projected to yield a revenue stream that averages \$902,000 per year. Specific park improvements and trails to be funded with impact fees will be approved by City Council during the annual budget process.

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. See Appendix A for documentation of the development projections that drive the cash flow analysis.

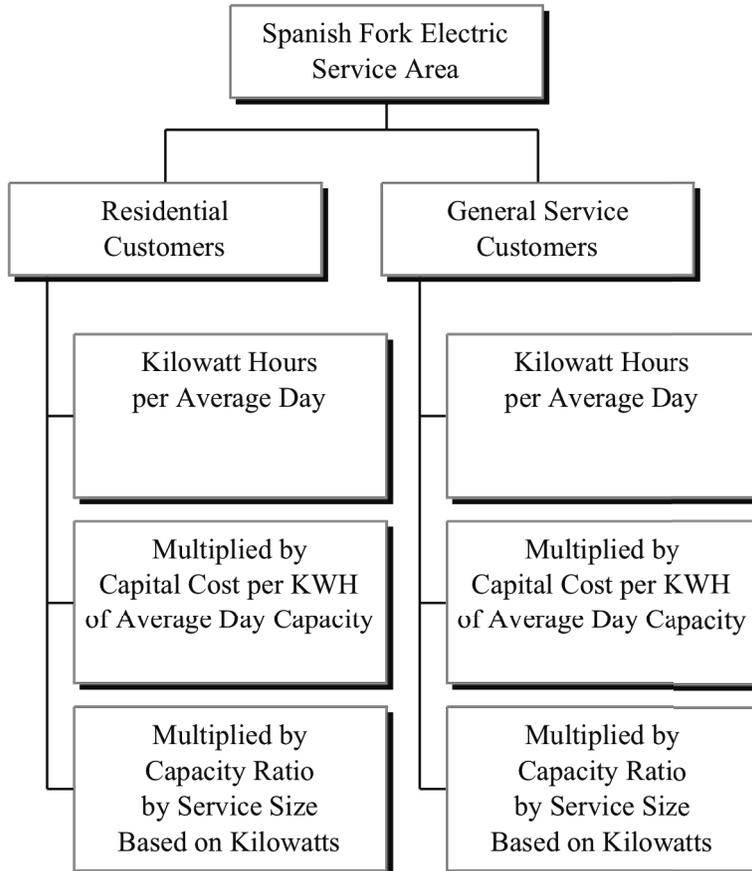
Figure 18 – Cash Flow Summary for Parks and Recreation

Spanish Fork, Utah (2010\$ in thousands)	Year => 2009	1 2010	2 2011	3 2012	4 2013	5 2014	6 2015	Cumulative Total	Average Annual
REVENUES									
1 Park Fee - SF		\$766	\$782	\$807	\$827	\$852	\$871	\$4,905	\$818
2 Park Fee - MF		\$79	\$81	\$84	\$86	\$88	\$90	\$509	\$85
Park Impact Fees		\$845	\$863	\$891	\$912	\$940	\$962	\$5,414	\$902
CAPITAL COSTS									
Park Improvements		\$780	\$795	\$825	\$840	\$870	\$885	\$4,995	\$833
Trails		\$70	\$71	\$73	\$75	\$77	\$79	\$446	\$74
Parks Subtotal		\$850	\$866	\$898	\$915	\$947	\$964	\$5,441	\$907
NET CAPITAL FACILITIES CASH FLOW - Parks									
Annual Surplus or (Deficit)		(\$4)	(\$3)	(\$7)	(\$3)	(\$7)	(\$3)	(\$28)	(\$5)
Cumulative Surplus or (Deficit)		(\$1,200)	(\$1,204)	(\$1,208)	(\$1,215)	(\$1,218)	(\$1,225)	(\$1,228)	

Municipal Power

Impact fees for Municipal Power are based a plan-based methodology. A six-year Capital Facilities Plan (CFP) was used to determine the growth-related capital cost per kilowatt-hour of average day capacity. Figure 21 graphically depicts the municipal power impact fee methodology.

Figure 21 - Municipal Power Impact Fee Methodology



Demand Indicators

Municipal Power impact fees are based on customer classification, either Residential or General Service, and service size measured by kilowatts. Electricity demand can vary significantly depending upon the particular use of a building and the type of heating. For example, a large, all-electric home may require 400 amp service (96 kilowatts) in contrast to a smaller starter home with natural gas heat, that would only require 100 amp service (24 kilowatts). Figure 22 provides calendar year 2009 data on megawatt-hours (MWH) per year, kilowatt-hours (KWH) per day, and the number of customers. Current demand factors are 25 KWH per average day for residential customers and 187 KWH per average day for General Service Customers.

Figure 22 – Municipal Power Demand by Type of Customer

Electric Demand CY 2009

	<i>MWH Per Year</i>	<i>KWH Per Day</i>	<i>Customers Jul-2009</i>	<i>KWH Per Day Per Customer</i>	
Residential	82,848	226,981	9,226	25	1.04 Residential Customers per Housing Unit
General Service	75,436	206,673	1,107	187	7.64 Jobs per General Service Customer
Large Power	42,291	115,865	10	11,587	
TOTAL	200,575	549,520	10,343		

Average Daily Kilowatt Hours

Historical data and the projected increase in average day kilowatt-hours are shown in Figure 23. The six-year forecast is based on the projected increase in housing units and jobs located in Spanish Fork. Approximately 14% of average day kilowatt-hours in 2015 are due to additional customers over the next six years.

Figure 23 - Municipal Power Demand

<i>Year</i>	<i>FY</i>	<i>Peak Megawatts*</i>	<i>Megawatt Hours per Year</i>	<i>Average Day KWH**</i>	<i>Cumulative Increase Avg Day KWH</i>	
past 6	2003	03-04	41.190	185,074	507,052	
past 5	2004	04-05	38.793	186,691	511,482	
past 4	2005	05-06	43.152	203,365	557,164	
past 3	2006	06-07	47.775	214,925	588,836	
past 2	2007	07-08	52.673	227,086	622,153	
past 1	2008	08-09	52.300	221,992	608,197	
Current	2009	09-10	56.162	200,574	549,519	
future 1	2010	10-11	59.071	205,548	563,146	13,627
future 2	2011	11-12	61.980	210,700	577,259	27,740
future 3	2012	12-13	64.889	216,032	591,870	42,351
future 4	2013	13-14	67.798	221,528	606,927	57,408
future 5	2014	14-15	70.707	227,206	622,483	72,964
future 6	2015	15-16	73.615	233,065	638,534	89,015

* 2009-2015 based on trend extrapolation of past six years

** Based on Kilowatt Hours per customer in 2009 and projected customer increase through 2015.

<i>Growth Share</i> 14%

Planned Electric Improvements

As shown in Figure 24, the City anticipates approximately \$4.79 million in growth-related system improvements over the next six years. The cost of these projects was divided by the increase in average day kilowatt-hours from the base year (FY09-10) to the end of the CFP (FY15-16).

Figure 24 - Municipal Power Capital Facilities Plan Summary

Fiscal Year=>	Yr 1 10-11	Yr 2 11-12	Yr 3 12-13	Yr 4 13-14	Yr 5 14-15	Yr 6 15-16	TOTAL
1 6 ac for Substation 1700 W 1400S	\$328,548						\$328,548
2 46 kV overhead line 2700 N 200E to Dry Creek Substation	\$500,000						\$500,000
3 12 kV overhead line 2700 N Chappel Dr to North Substation		\$250,000					\$250,000
4 46:12 kV Substation - 46 kV breaker and bussing Woodhouse Substation		\$250,000					\$250,000
5 46 kV addition to Dry Creek Substation (46 kV structure, buss, metering, and breaker)		\$410,000					\$410,000
6 46 kV addition to Nebo Substation (46 kV structure, buss, metering)		\$166,000					\$166,000
7 138:46 kV Substation - add 75 mVA transformer and interconnect at Nebo Substation			\$930,000				\$930,000
8 12 kV UG 600 A loop line 100 S 900 W to 1400 W Arrowhead Trail				\$300,000			\$300,000
9 Reconductor 12kV SESD area*	\$13,300						\$13,300
10 46 kV Reconductor Industrial Substation to Canyon Rd Substation*					\$70,000		\$70,000
11 46 kV Reconductor Industrial Substation to Woodhouse Substation to Canyon Rd Substation*						\$70,000	\$70,000
12 600 A line oversizing	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000	\$1,500,000
Total	\$1,091,848	\$1,326,000	\$1,180,000	\$550,000	\$320,000	\$320,000	\$4,787,848
							Increase in Average Day Kilowatt Hours 2009 to 2015 89,015
							Capital Cost per Kilowatt Hour of Capacity \$53.78

* New development only pays 14% growth share.

Revenue Credit Evaluation for Municipal Power

A credit for future revenue generated by new development is only necessary if there is potential double payment for system improvements. In Spanish Fork, impact fee revenue will be used exclusively for growth-related capacity improvements. If elected officials make a legislative policy decision to fully fund growth-related system improvements from impact fees, a credit for other revenue sources is unnecessary.

Proposed Municipal Power Impact Fees

Standards used to derive the Municipal Power impact fee are summarized in the boxed area at the top of Figure 25. Proposed impact fees, for both Residential and General Service customers, are indexed to typical service sizes in Spanish Fork, based on kilowatts. For example, the fee for 400 amp residential service is derived from the formula: $25 \times \$53.78 \times 96 / 30 = \$4,302$ (truncated). General Service electric fees are indexed to three-phase 120/208V service. For example, the impact fee for 400 amp, three-phase 277/480V service is derived from the formula: $187 \times \$53.78 \times 332.2 / 72 = \$46,401$ (truncated).

Figure 25 - Municipal Power Fee Schedule

<i>Level Of Service</i>		<i>Standards:</i>			
Residential Customer KHW per Avg Day			25		
General Service Customer KWH per Avg Day			187		
CFP Cost per KWH of Avg Day Capacity			\$53.78		
<i>Municipal Power Impact Fee per Connection</i>					
	<i>Amps</i>	<i>Kilowatts</i>	<i>Proposed Fee</i>	<i>Current Fee</i>	<i>Increase/ (Decrease)</i>
Residential Single-Phase 120/240V Service Sizes					
100	24		\$1,075	\$1,098	(\$23)
125	30		\$1,344	\$1,356	(\$12)
150	36		\$1,613	\$1,614	(\$1)
200	48		\$2,151	\$2,129	\$22
225	54		\$2,420	\$2,387	\$33
400	96		\$4,302	\$4,191	\$111
General Service Single-Phase 120/240V Service Sizes					
100	24		\$3,352		
125	30		\$4,190		
150	36		\$5,028		
200	48		\$6,704		
225	54		\$7,542		
400	96		\$13,409		
General Service Three-Phase 120/208V Service Sizes					
125	45.0		\$6,285	\$2,000	\$4,285
150	54.0		\$7,542	\$2,387	\$5,155
200	72.0		\$10,056	\$3,160	\$6,896
400	143.9		\$20,099	\$6,248	\$13,851
600	215.9		\$30,156	\$9,341	\$20,815
800	287.9		\$40,213	\$12,433	\$27,780
1,000	359.8		\$50,256	\$15,522	\$34,734
1,200	431.8		\$60,313	\$18,614	\$41,699
1,600	575.7		\$80,412	\$24,795	\$55,617
2,000	719.7		\$100,526	\$30,980	\$69,546
2,500	899.6		\$125,654	\$38,707	\$86,947
General Service Three-Phase 277/480V Service Sizes					
125	103.8		\$14,498		
150	124.6		\$17,403		
200	166.1		\$23,200		
400	332.2		\$46,401		
600	498.2		\$69,587		
800	664.3		\$92,788		
1,000	830.4		\$115,989		
1,200	996.5		\$139,189		
1,600	1,328.6		\$185,577		
2,000	1,660.8		\$231,978		
2,500	2,076.0		\$289,972		

Funding Strategy for Electric Infrastructure

Projected cash flow for municipal power impact fees is shown in Figure 26. Impact fee revenue is expected to average \$804,000 per year, which roughly matches the projected capital costs of the growth-related CFP. At the end of FY09, Spanish Fork had a positive balance in the Municipal Power impact fee fund of approximately \$298,000. All amounts shown below are 2010 dollars (not inflated over time).

The cash flow summary provides an indication of the impact fee revenue and expenditures necessary to meet the growth-related demand for infrastructure. To the extent the rate of development either accelerates or slows down, there will be a corresponding change in the impact fee revenue and the timing of capital improvements. See Appendix A for discussion of the development projections that drive the cash flow analysis.

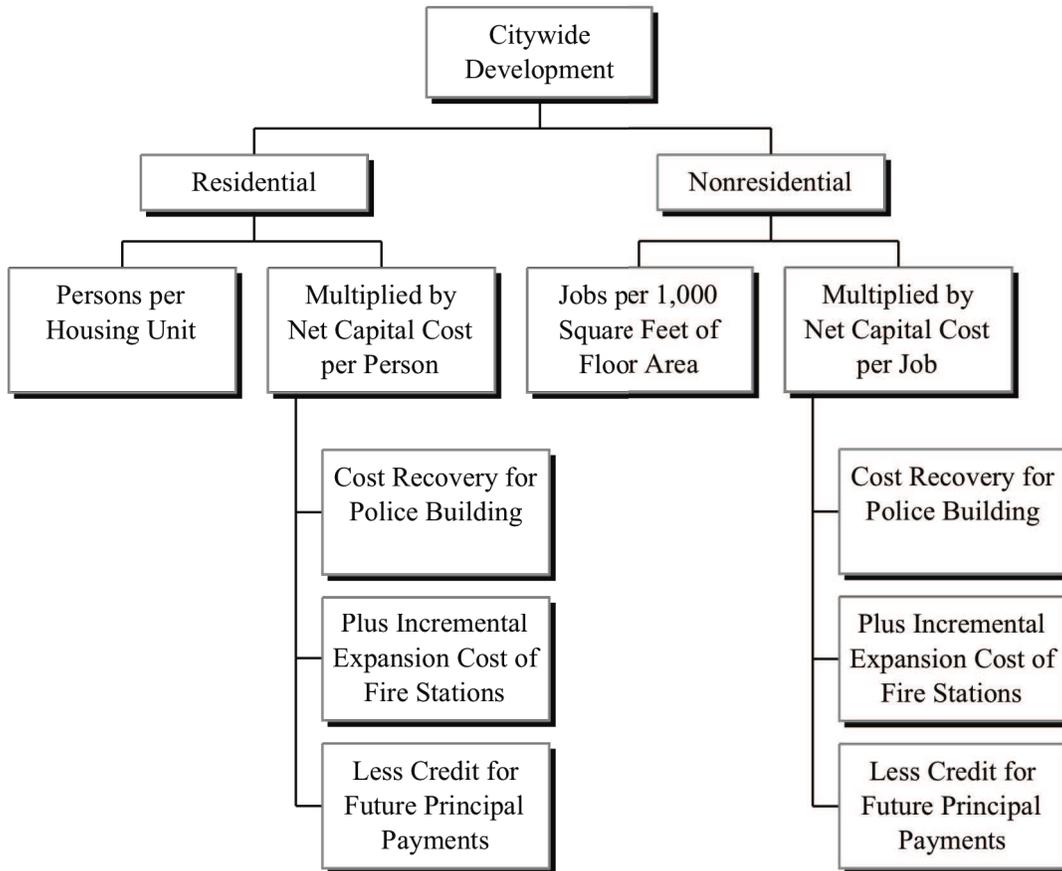
Figure 26 – Cash Flow Summary for Municipal Power

Spanish Fork, Utah (2010\$ in thousands)	Year => 2009	1 2010	2 2011	3 2012	4 2013	5 2014	6 2015	Cumulative Total	Average Annual
REVENUES									
8 Mun Pwr Fee - Res		\$335	\$342	\$354	\$362	\$373	\$382	\$2,148	\$358
9 Mun Pwr Fee - NonRes		\$403	\$423	\$438	\$454	\$470	\$488	\$2,677	\$446
Munic Power Fees Subtotal		\$739	\$765	\$792	\$816	\$843	\$870	\$4,825	\$804
CAPITAL COSTS									
Municipal Power CFP		\$1,092	\$1,326	\$1,180	\$550	\$320	\$320	\$4,788	\$798
Mun Pwr Cost Recovery (not applicable)								\$0	\$0
Municipal Power Subtotal		\$1,092	\$1,326	\$1,180	\$550	\$320	\$320	\$4,788	\$798
NET CAPITAL FACILITIES CASH FLOW - Municipal Power									
Annual Surplus or (Deficit)		(\$353)	(\$561)	(\$388)	\$266	\$523	\$550	\$37	\$6
Cumulative Surplus or (Deficit)		\$298	(\$55)	(\$616)	(\$1,004)	(\$738)	(\$215)	\$335	

Public Safety

The public safety impact fee formula is diagrammed in Figure 31. For residential development, public safety impact fees are a function of population growth. Law enforcement impact fees for nonresidential development are based on the estimated number of employees per development unit (e.g. per 1,000 square feet of floor area).

Figure 31 – Public Safety Impact Fee Methodology



Public Safety Infrastructure Standards

The demand for police and fire building space is a function of both residential and nonresidential development. As shown in Figure 32, calls for service in 2009 were used to allocate infrastructure to residential and nonresidential development.

Figure 32 – Public Safety Calls for Service

<i>Police Calls in 2009</i>		
Residential	11,764	82%
Nonresidential	2,595	18%
TOTAL	14,359	100%
<i>Fire Calls in 2009</i>		
Residential	192	78%
Nonresidential	53	22%
SUBTOTAL	245	100%
Rescue Calls	206	
TOTAL	451	

Spanish Fork oversized Police Headquarters to hopefully accommodate space needs until the bonds used to construct the building are retired in 2026. Infrastructure standards for the police building are based on projected demand units in 2026, as shown in Figure 33.

Figure 33 – Cost Recovery for Police Building

	<i>Site</i>	<i>Square Feet</i>		
	Police Headquarters	28,000		
	Cost per Sq Ft =>		\$295	
	Proportionate Share	2026 Demand Units	Sq Ft per Demand Unit	Cost per Demand Unit
Residential	82%	50,928 population	0.45	\$132.99
Nonresidential	18%	15,587 jobs	0.32	\$95.38

Projected Need for Police Building Space

Infrastructure standards from the table above were applied to projected demand units over the next 17 years to yield the infrastructure needs shown in Figure 34. The growth-related cost of the Police Headquarters is \$3,146,000.

Figure 34 – Police Building Needs Analysis

<i>Police Standards</i>						
Police Buildings - Residential		0.45	SF per person			
Police Buildings - Nonresidential		0.32	SF per vehicle trip to nonres dev			
Building Cost		\$295	per square foot			
	<i>Year</i>	<i>Spanish Fork</i>		<i>Infrastructure Needed</i>		
		<i>Population</i>	<i>Jobs</i>	<i>Building SF Residential</i>	<i>Building SF Nonresidential</i>	<i>TOTAL Building SF</i>
Base	FY09-10	32,389	8,454	14,602	2,734	17,336
Year 1	2010	33,263	8,764	14,996	2,834	17,830
Year 2	2011	34,160	9,085	15,400	2,938	18,338
Year 3	2012	35,082	9,418	15,816	3,045	18,861
Year 4	2013	36,029	9,763	16,243	3,157	19,400
Year 5	2014	37,001	10,120	16,681	3,272	19,953
Year 6	2015	37,999	10,491	17,131	3,392	20,523
Year 7	2016	39,024	10,876	17,593	3,517	21,110
Year 8	2017	40,077	11,274	18,068	3,645	21,713
Year 9	2018	41,158	11,687	18,555	3,779	22,334
Year 10	2019	42,269	12,116	19,056	3,918	22,974
Year 11	2020	43,409	12,560	19,570	4,061	23,631
Year 12	2021	44,581	13,020	20,099	4,210	24,309
Year 13	2022	45,783	13,497	20,640	4,364	25,004
Year 14	2023	47,019	13,992	21,198	4,524	25,722
Year 15	2024	48,287	14,504	21,769	4,690	26,459
Year 16	2025	49,590	15,036	22,357	4,862	27,219
Year 17	2026	50,928	15,587	22,960	5,040	28,000
<i>17-Yr Increase</i>		18,539	7,133	8,358	2,306	10,664
Total Growth-Related Building Cost =>						\$3,146,000

Credit for Future Principal Payments

To avoid double payment for the Police Headquarters, a credit is provided for future principal payments. Because interest costs were not included in the cost analysis, a credit for interest is not necessary. To account for the time value of the future revenue stream, a discount rate adjusts the payments to present value. Each year Spanish Fork may increase the impact fees by deleting past payments, which will decrease the credit.

Figure 35 – Credit for Principal Payments on Police Headquarters

Fiscal Year	Principal Payments*	Spanish Fork		Credit Allocation**	
		Population	Jobs	per Person	per Job
10-11	\$318,816	33,263	8,764	\$7.86	\$6.55
11-12	\$328,193	34,160	9,085	\$7.88	\$6.50
12-13	\$346,947	35,082	9,418	\$8.11	\$6.63
13-14	\$356,323	36,029	9,763	\$8.11	\$6.57
14-15	\$365,700	37,001	10,120	\$8.10	\$6.50
15-16	\$384,454	37,999	10,491	\$8.30	\$6.60
16-17	\$404,208	39,024	10,876	\$8.49	\$6.69
17-18	\$421,962	40,077	11,274	\$8.63	\$6.74
18-19	\$431,339	41,158	11,687	\$8.59	\$6.64
19-20	\$459,470	42,269	12,116	\$8.91	\$6.83
20-21	\$478,224	43,409	12,560	\$9.03	\$6.85
21-22	\$496,977	44,581	13,020	\$9.14	\$6.87
22-23	\$515,731	45,783	13,497	\$9.24	\$6.88
23-24	\$543,862	47,019	13,992	\$9.48	\$7.00
24-25	\$571,993	48,287	14,504	\$9.71	\$7.10
25-26	\$600,124	49,590	15,036	\$9.92	\$7.18
26-27	\$618,878	50,928	15,587	\$9.96	\$7.15
TOTAL	\$7,643,201			\$149.49	\$115.28
			Discount Rate	4.00%	4.00%
			Present Value	\$105.43	\$82.02

* Sales Tax Bonds Series 2007; Police Headquarters was 38% of the total.

** Based on calls for service, 82% to residential and 18% to nonresidential.

Fire Stations

Spanish Fork currently has one large, central fire station but is planning future stations on the east and west sides. City staff provided the cost estimate of \$286 per square foot, which includes three acres of land.

Figure 36 – Fire Infrastructure Standards

Site	Current SF	Planned SF	CIP Estimate*	
Main Station	15,720		\$1,717,000	
East Station		6,000		
West Station		6,000		
TOTAL	15,720	12,000		
Cost per Sq Ft for New Station =>		\$286		
	Proportionate Share	2009 Demand Units	Sq Ft per Demand Unit	Cost per Demand Unit
Residential	78%	32,389 population	0.38	\$108.27
Nonresidential	22%	8,454 jobs	0.41	\$116.99

* Total project cost for building plus three acres of land.

Based on projected increases in residents and jobs, Spanish Fork needs to construct approximately one half of a fire station over the next six years. The City will monitor the pace of development and calls for service to determine when an additional station must be brought into service. If a new station is not constructed within the next six years, the City may use impact fees for site work, design and engineering related to the future station.

Figure 37 – Fire Station Needs Analysis

Standards for Fire Stations

Fire Station - Residential	0.38 square feet per person
Fire Station - Nonresidential	0.41 square feet per job
Fire Station Cost	\$286 per square foot

		Spanish Fork		Infrastructure Needed		
Year		Population	Jobs	Station SF Residential	Station SF Nonresidential	TOTAL Station SF
Base	FY09-10	32,389	8,454	12,262	3,458	15,720
Year 1	2010	33,263	8,764	12,592	3,585	16,177
Year 2	2011	34,160	9,085	12,932	3,717	16,649
Year 3	2012	35,082	9,418	13,281	3,853	17,134
Year 4	2013	36,029	9,763	13,640	3,994	17,634
Year 5	2014	37,001	10,120	14,008	4,140	18,148
Year 6	2015	37,999	10,491	14,385	4,292	18,677
Six-Yr Increase =>		5,610	2,037	2,123	834	2,957
Total Growth-Related Cost of Fire Stations =>						\$846,000

Public Safety Impact Fee Calculations

Proposed public safety impact fees are shown in Figure 38. For nonresidential development, the fees are expressed per thousand square feet of floor area. Therefore, a health complex with 125,000 square feet of floor area would pay a public safety impact fee of \$54,000 (i.e. 125 x \$432).

For multifamily housing, the proposed public safety impact fee is \$380 per unit. Proposed fees for single-family housing are based on unit size. In Spanish Fork, the average size single-family house constructed since 2001 has approximately 2900 square feet of floor area. The demographic analysis used to derive fees by house size may be found in Appendix A.

Figure 38 – Public Safety Impact Fees

<i>Residential</i> <i>Level Of Service</i>	Per Person		<i>Total</i>
	<i>Police</i>	<i>Fire</i>	
Infrastructure Cost	\$132.99	\$108.27	\$241.26
Revenue Credit	(\$105.43)	\$0.00	(\$105.43)
Net Cost	\$27.56	\$108.27	\$135.83

Residential Impact Fees per Housing Unit

<i>Unit Type</i>	<i>Square Feet</i>	<i>Persons per Housing Unit</i>	<i>Proposed Fee</i>
Multifamily	All Sizes	2.8	\$380
Single Family	2499 or less	1.9	\$258
Single Family	2500-2599	2.1	\$285
Single Family	2600-2699	2.4	\$325
Single Family	2700-2799	2.6	\$353
Single Family	2800-2899	2.8	\$380
Single Family	2900-2999	3.0	\$407
Single Family	3000-3099	3.3	\$448
Single Family	3100-3199	3.5	\$475
Single Family	3200-3299	3.7	\$502
Single Family	3300-3399	3.9	\$529
Single Family	3400-3499	4.0	\$543
Single Family	3500-3599	4.2	\$570
Single Family	3600-3699	4.4	\$597
Single Family	3700-3799	4.6	\$624
Single Family	3800 or more	4.7	\$638

<i>Nonresidential</i> <i>Level Of Service</i>	Per Job		<i>Total</i>
	<i>Police</i>	<i>Fire</i>	
Infrastructure Cost	\$95.38	\$116.99	\$212.37
Revenue Credit	(\$82.02)	\$0.00	(\$82.02)
Net Cost	\$13.36	\$116.99	\$130.35

Nonresidential Impact Fees per 1,000 Square Feet of Floor Area

<i>Development Type</i>	<i>Jobs per KSF</i>	<i>Proposed Fee</i>
Retail / Restaurant	1.30	\$169
All Other Services	3.32	\$432
Industrial	1.79	\$233

Funding Sources for Public Safety Infrastructure

As shown in Figure 39, public safety impact fees are expected to generate approximately \$887,000 in revenue through the year 2015. This revenue projection is based on the demographic data described in Appendix A and the fee schedule shown above, assuming the average size single-family house has 2900 square feet of floor area. Impact fee revenue may be used to make debt service payments on the Police Headquarters. The initial deficit is the growth-related cost of Police Headquarters.

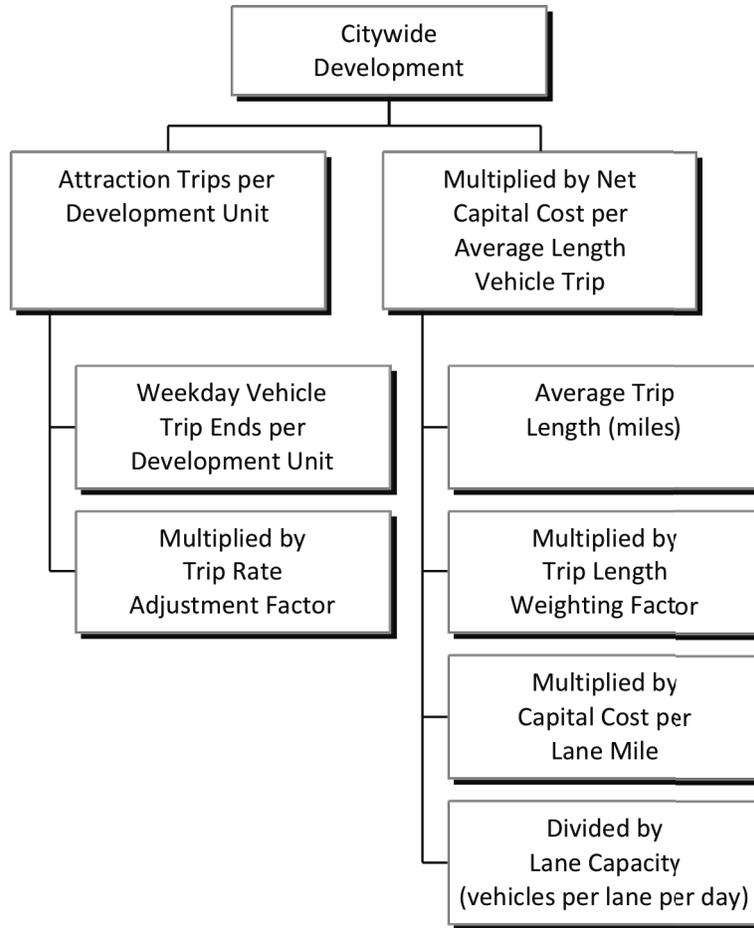
Figure 39 – Cash Flow Analysis for Public Safety Facilities

Spanish Fork, Utah (2010\$ in thousands)	Year => 2009	1 2010	2 2011	3 2012	4 2013	5 2014	6 2015	Cumulative Total	Average Annual
REVENUES									
17 Pub Saf Fee- SF		\$88	\$90	\$93	\$95	\$98	\$100	\$563	\$94
18 Pub Saf Fee - MF		\$9	\$9	\$10	\$10	\$10	\$10	\$58	\$10
19 Pub Saf Fee - Retail/Restaura		\$7	\$8	\$8	\$8	\$9	\$9	\$49	\$8
20 Pub Saf Fee - Other Services		\$20	\$20	\$21	\$22	\$23	\$23	\$129	\$21
21 Pub Saf Fee - Industrial		\$13	\$14	\$14	\$15	\$15	\$16	\$87	\$15
Public Safety Impact Fees		\$137	\$141	\$146	\$150	\$154	\$159	\$887	\$148
CAPITAL COSTS									
Police Debt Service		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Fire Stations		\$131	\$135	\$139	\$143	\$147	\$151	\$846	\$141
Public Safety Subtotal		\$131	\$135	\$139	\$143	\$147	\$151	\$846	\$141
NET CAPITAL FACILITIES CASH FLOW - Public Safety									
Annual Surplus or (Deficit)		\$7	\$6	\$7	\$7	\$7	\$7	\$41	\$7
Cumulative Surplus or (Deficit)		(\$3,146)	(\$3,139)	(\$3,133)	(\$3,126)	(\$3,120)	(\$3,112)	(\$3,105)	

Roads

As shown in Figure 41, the road impact fee is derived from trip generation rates, trip rate adjustment factors and the net capacity cost per average length vehicle trip. The cost per vehicle trip is a function of the average trip length, trip-length weighting factor, costs per lane mile, and lane capacity.

Figure 41 – Road Impact Fee Formula



Growth-Related Road Improvements

As shown in Figure 42, an additional seven lane miles of system improvements are needed in Spanish Fork to accommodate projected development over the next six years. The total cost of system improvements, including intersections, is estimated to be approximately \$5.24 million in current dollars (not inflated over time). For new road segments and intersections with no existing deficiency, the growth share is 100% of the total cost. For 10th North, only the growth share of the total project cost has been included in the CFP. Dividing the growth cost by the total lane mile increase indicates an average cost of \$749,000 per lane mile. A lane mile is a rectangular area of pavement, one lane wide and one mile long. Planning-level cost estimates were prepared by provided by City staff.

Figure 42 – Roads CFP

<i>Initial Expenditure</i>	<i>Project</i>	<i>Location</i>	<i>Lane Miles</i>	<i>Growth Cost (1)</i>
FY09-10	Widen	Cut Bridge		\$817,904
FY09-10	Widen 1000 North	Main St to US 6	2.75	\$2,358,468
FY09-10	Signal	1000 N & 200 E		\$119,787
FY09-10	Signal	1000 N & 400 E		\$116,091
FY09-10	Signal	1000 N & 600 E		\$113,733
FY09-10	Signal	Del Monte & Arrowhead Trail		\$100,000
FY09-10	Impact Fee Study			\$10,000
FY10-11	Construct 5-lane arterial	Legacy Parkway	3.00	\$340,769
FY10-11	Signal	1600 North & Main St		\$150,000
FY12-13	Realign Intersection	2600 East & Canyon Rd		\$550,000
FY14-15	Signal	Center St & 1150 East		\$208,800
FY15-16	Construct 5-lane arterial	US 6 & 1000 N to 1100 E & 2700 N	1.25	\$355,578
TOTAL			7.00	\$5,241,130
Cost per Lane Mile =>				\$749,000

(1) Cost estimates provided by Spanish Fork Public Works. New development pays 100% of the cost of new road segments. For intersections with no existing deficiency, the growth share is 100%. The cost 1000 North is not the total cost, but the growth share based on widening the road from 3 to 5 lanes.

Trip Generation

Spanish Fork road impact fees are based on average weekday vehicle trip ends. Trip generation rates are from the reference book Trip Generation published by the Institute of Transportation Engineers (ITE 2008). A vehicle trip end represents a vehicle either entering or exiting a development (as if a traffic counter were placed across a driveway). To calculate road impact fees, 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%. As discussed further below, the impact fee methodology includes additional adjustments to make the fees proportionate the infrastructure demand for particular types of development.

Adjustments for Commuting Patterns and Pass-By Trips

Residential development has a larger trip adjustment factor of 63% to account for commuters leaving Spanish Fork for work. According to the 2001 National Household Travel Survey (see Table 29 in the Federal Highway Administration publication dated 12/04) home-based weekday work trips are typically 31% of production trips (i.e., all out-bound trips, which are 50% of all trip ends). Also, the U.S. Census Bureau's web application OnTheMap4 indicates that 85% of Spanish Fork workers travel outside the city for work. In

combination, these factors ($0.31 \times 0.50 \times 0.85 = 0.13$) support the additional 13% allocation of trips to residential development.

For retail/restaurants, the trip adjustment factor is less than 50% because retail development and some services, like day care centers, attract vehicles as they pass by on arterial and collector roads. For example, when someone stops at a convenience store on the way home from work, the convenience store is not the primary destination. For the average shopping center, the ITE data indicates that 34% of the vehicles that enter are passing by on their way to some other primary destination. The remaining 66% of attraction trips have the commercial site as their primary destination. Because attraction trips are half of all trips, the trip adjustment factor is 66% multiplied by 50%, or approximately 33% of the trip ends.

Vehicle Miles of Travel and Infrastructure Standard

A Vehicle Mile of Travel (VMT) is a measurement unit equal to one vehicle traveling one mile. In the aggregate, VMT is the product of vehicle trips multiplied by the average trip length¹. The average trip length in Spanish Fork is calibrated using data on planned lane-miles of system improvements and a lane capacity standard (discussed below). The current infrastructure standard in Spanish Fork is 1.37 lane-miles per 10,000 VMT (see Figure 43).

Lane Capacity

Transportation impact fees are based on a lane capacity standard of 7,300 vehicles per lane, obtained from Florida Department of Transportation guidelines for annualized average daily traffic by functional classification and road characteristics. Spanish Fork impact fee calculations assume a two-lane undivided arterial operating at LOS “D” has an estimated capacity of 14,600 vehicles per day, or 7,300 vehicles per lane.

Trip Length Weighting Factor by Type of Land Use

The road impact fee methodology includes a percentage adjustment, or weighting factor, to account for trip length variation by type of land use. As documented in Table 6 of the 2001 National Household Travel Survey (published 12/04 by the Federal Highway Administration), vehicle trips from residential development are approximately 122% of the average trip length. The residential trip length adjustment factor includes data on home-based work trips, social, and recreational purposes. Conversely, shopping trips associated with commercial development are roughly 68% of the average trip length while other nonresidential development typically accounts for trips that are 75% of the average trip length. The specific weighting factors for each development prototype are shown in Figure 43.

¹ Typical VMT calculations for development-specific traffic studies, along with most transportation models of an entire urban area, are derived from traffic counts on particular road segments multiplied by the length of that road segment. For the purpose of impact fees, VMT calculations are based on attraction (inbound) trips to development located in the service area, with the trip lengths calibrated to the road network considered to be system improvements. This refinement eliminates pass-through or external-external trips, and travel on roads that are not system improvements (e.g. interstate highways and local streets).

Development Prototypes and Projected Travel Demand

The relationship between the amount of development in Spanish Fork and planned system improvements is documented in Figure 43. In the table below HU means housing units, KSF means square feet of nonresidential development, in thousands, and the Institute of Transportation Engineers is abbreviated ITE.

Projected development in Spanish Fork over the next six years, and the corresponding need for additional lane miles, is shown in the middle section of Figure 43. Trip generation rates and trip adjustment factors convert projected development into average weekday vehicle trips. A typical vehicle trip, such as a person leaving their home and traveling to work, generally begins on a local street that connects to a collector street, which connects to an arterial road and eventually to a state or interstate highway. This progression of travel up and down the functional classification chain limits the average trip length question to the following, “What is the average vehicle trip length on impact fee system improvements (i.e., major roads listed in the CIP)?”

With 7.0 lane miles of system improvements and a lane capacity standard of 7,300 vehicles per lane, the impact fee road network has approximately 51,100 vehicle miles of capacity (i.e., 7,300 vehicles per lane traveling the entire 7.0 miles). To derive the average utilization (i.e., average trip length expressed in miles) of the system improvements, divide vehicle miles of capacity by the vehicle trips attracted to new development in Spanish Fork. As shown below, new development increases average weekday vehicle trips from 84,391 in 2009 to 100,803 in 2015, for a net increase of 16,412 trips. Dividing 51,100 vehicle miles of capacity by the net increase in average weekday vehicle trips yields an unweighted average trip length of approximately 3.1 miles. However, the calibration of average trip length includes the same adjustment factors used in the impact fee calculations (i.e., journey-to-work commuting, commercial pass-by adjustment, and average trip length adjustment, by type of land use). Using a series of spreadsheet iterations, the weighted-average trip length is 3.04 miles, as shown in Figure 43.

Figure 43 - Projected Travel Demand and Road Needs

	<i>ITE Code</i>	<i>Dev Type</i>	<i>Weekday VTE</i>	<i>Dev Unit</i>	<i>Trip Adj</i>	<i>Trip Length Wt Factor</i>			
R1	210	Single Fa	10.60	HU	63%	122%			
R2	220	Multifam	8.30	HU	63%	122%			
NR1	857	Retail/Res	41.80	KSF	33%	68%			
NR2	710	All Other	11.01	KSF	50%	75%			
NR3	140	Industrial	3.82	KSF	50%	75%			
Avg Trip Length (miles)	3.04								
Capacity Per Lane	7,300								
Cost per Lane-Mile	\$749,000								
	Year->	<i>Base</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>Six-Year Increase</i>
		<i>FY09-10</i>	<i>2010</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>	<i>2015</i>	
Spanish Fork, Utah									
Single Family HU		7,984	8,200	8,420	8,648	8,881	9,122	9,367	1,383
Multifamily HU		887	911	936	961	987	1,014	1,041	154
Retail/Restaurant KSF		1,207	1,251	1,297	1,345	1,394	1,445	1,498	291
All Other Services KSF		1,238	1,284	1,331	1,379	1,430	1,482	1,537	298
Industrial KSF		1,556	1,613	1,672	1,733	1,797	1,863	1,931	375
<i>Single Family Trips</i>		53,316	54,759	56,231	57,752	59,309	60,913	62,554	
<i>Multifamily Trips</i>		4,639	4,764	4,892	5,025	5,160	5,300	5,442	
<i>Retail/Restaurant Trips</i>		16,648	17,258	17,891	18,546	19,226	19,929	20,659	
<i>All Other Services Trips</i>		6,816	7,066	7,325	7,594	7,872	8,160	8,459	
<i>Industrial Trips</i>		2,972	3,081	3,194	3,311	3,432	3,558	3,688	
<i>Total Vehicle Trips</i>		84,391	86,929	89,533	92,227	94,998	97,859	100,803	
<i>Vehicle Miles of Travel (VMT)</i>		271,676	279,572	287,662	296,027	304,618	313,483	322,587	
LANE MILES		37.2	38.3	39.4	40.6	41.7	42.9	44.2	7.0
ANL LN MI			1.1	1.1	1.2	1.1	1.2	1.3	
Anl Lane Mile Cost (millions)			\$0.82	\$0.82	\$0.90	\$0.82	\$0.90	\$0.97	\$5.24
Lane Miles per 10,000 VMT		1.37	1.37	1.37	1.37	1.37	1.37	1.37	

Revenue Credit Evaluation

A credit for future gas taxes is only necessary if there is potential double payment for system improvements. In Spanish Fork, gas tax revenue will be used for maintenance of existing facilities, correcting existing deficiencies, and for capital projects that are not impact fee system improvements. As shown below in the cash flow analysis, cumulative impact fee revenue matches the cost of growth-related cost system improvements. There is no potential double payment from other revenues because road impact fees will exclusively fund system improvements.

For major development proposals with the potential for significantly increasing future sales tax revenue, Spanish Fork will consider a sales tax credit to decrease road impact fees. To offset the sales tax credit, the City will reimburse the road impact fee fund from future sales tax revenue. Development agreements will provide documentation of any sales tax credit, reduced road impact fees, and reimbursement schedule.

Road Impact Fees

Input variables for the road impact fee are shown in the upper section of Figure 44. Attraction trips by type of development are multiplied by the capacity cost per average length vehicle trip to yield the road impact fees. To derive the capital cost per trip, multiply the average trip length by the trip-length weighting factor (by type of land use), then multiply by the cost per lane mile and divide by the lane capacity. For example, the road impact fee formula for attached housing is $8.3 \times 0.63 \left((3.04 \times 1.22 \times \$749,000 / 7300) - 0 \right) = \$1,989$ (truncated) per unit.

Fees for nonresidential development are listed per 1,000 square feet of floor area. For example, a large retail building like a super Wal-Mart store might have 196,000 square feet of floor area. If a super Wal-Mart were constructed after the effective date of the proposed road impact fee, the store would have to pay \$573,300 (196 x \$2,925). Although this is a significant amount, the proposed road impact fee would only add 4% to the construction cost, based on Marshall & Swift Valuation Service construction cost of at least \$70 per square foot for this type of retail building.

Figure 44 – Road Impact Fees

<i>Infrastructure Standards</i>						
	Average Miles per Vehicle Trip		3.04			
	Cost per Lane Mile		\$749,000			
	Lane Capacity (vehicles per day)		7,300			
	Revenue Credit (not applicable)		\$0			
<i>ITE Code</i>	<i>Unit Type</i>	<i>Square Feet</i>	<i>Weekday Vehicle Trip Ends</i>	<i>Trip Rate Adjustment Factors</i>	<i>Trip Length Weighting Factors</i>	<i>Proposed Road Impact Fee</i>
Residential (per Housing Unit)						
220	Multifamily	All Sizes	8.3	63%	122%	\$1,989
210	Single Family	2499 or less	7.3	63%	122%	\$1,750
210	Single Family	2500-2599	7.7	63%	122%	\$1,845
210	Single Family	2600-2699	8.2	63%	122%	\$1,965
210	Single Family	2700-2799	8.6	63%	122%	\$2,061
210	Single Family	2800-2899	9.1	63%	122%	\$2,181
210	Single Family	2900-2999	9.5	63%	122%	\$2,277
210	Single Family	3000-3099	9.9	63%	122%	\$2,373
210	Single Family	3100-3199	10.3	63%	122%	\$2,469
210	Single Family	3200-3299	10.7	63%	122%	\$2,565
210	Single Family	3300-3399	11.0	63%	122%	\$2,637
210	Single Family	3400-3499	11.4	63%	122%	\$2,732
210	Single Family	3500-3599	11.7	63%	122%	\$2,804
210	Single Family	3600-3699	12.0	63%	122%	\$2,876
210	Single Family	3700-3799	12.4	63%	122%	\$2,972
210	Single Family	3800 or more	12.7	63%	122%	\$3,044
Nonresidential (per 1,000 Sq Ft of floor area)						
857	Retail / Restaurant		41.80	33%	68%	\$2,925
710	All Other Services		11.01	50%	75%	\$1,287
140	Industrial		3.82	50%	75%	\$446

Funding Strategy for Transportation System Improvements

The cash flow summary shown in Figure 45 provides an indication of the road impact fee revenue and expenditures necessary to meet the demand for system improvements over the next six years. Cumulative road impact fee revenue of \$4.86 million over six years, assumes the average single-family house has 2900 square feet of floor area. In Spanish Fork, growth-related road improvements will require an average annual expenditure of approximately \$874,000.

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. See Appendix A for discussion of the development projections that drive the cash flow analysis.

Figure 45 – Cash Flow for Roads

Spanish Fork, Utah (2010\$ in thousands)	Year =>	1	2	3	4	5	6	Cumulative	Average	
	2009	2010	2011	2012	2013	2014	2015	Total	Annual	
REVENUES										
10	Roads Fee- SF	\$492	\$502	\$518	\$531	\$547	\$559	\$3,150	\$525	
11	Roads Fee - MF	\$48	\$49	\$50	\$52	\$53	\$54	\$306	\$51	
12	Roads Fee - Retail/Restaurant	\$129	\$134	\$139	\$144	\$149	\$155	\$851	\$142	
13	Roads Fee - Other Services	\$58	\$61	\$63	\$65	\$67	\$70	\$384	\$64	
14	Roads Fee - Industrial	\$25	\$26	\$27	\$28	\$29	\$30	\$167	\$28	
	Road Impact Fees	\$753	\$772	\$798	\$820	\$846	\$869	\$4,857	\$810	
CAPITAL COSTS										
	Roads CFP	\$874	\$874	\$874	\$874	\$874	\$874	\$5,241	\$874	
NET CAPITAL FACILITIES CASH FLOW - Roads										
	Annual Surplus or (Deficit)		(\$121)	(\$102)	(\$76)	(\$54)	(\$28)	(\$4)	(\$384)	(\$64)
	Cumulative Surplus or (Deficit)	\$0	(\$121)	(\$222)	(\$298)	(\$352)	(\$379)	(\$384)		

Proportionate Share Analysis

Impact fees for Spanish Fork City are proportionate and reasonably related to the capital facility service demands of new development. The written analysis of each impact fee methodology and the cash flow analysis have established that impact fees are necessary to achieve an equitable allocation of the costs, borne in the past and to be borne in the future, in comparison to the benefits already received and yet to be received.

The Impact Fees Act includes the seven evaluation factors set forth in the Utah Supreme Court decision known as *Banberry Development Corp. v. South Jordan City*. The analysis of these seven factors is discussed below.

- 1) The impact fees for Spanish Fork City are based on the cost of existing public facilities. Impact fees may include cost recovery components that were derived from the actual construction costs of specific capital improvements by Spanish Fork City. Impact fees are also based on Capital Facilities Plans that were prepared using local cost factors and construction practices typical to Spanish Fork City. These Capital Facilities Plans are based on engineering studies that have been incorporated into Spanish Fork's General Plan. The parks section contains an inventory of existing facilities and the cost of improvements. This inventory of existing facilities was used to derive level of service standards. These standards were then used to project the need for future park improvements.
- 2) The impact fee analysis has considered the funding of public facilities, including user charges, bonds, General Fund taxes, and intergovernmental transfers. If applicable, these revenue sources are shown in the cash flow analysis for each type of impact fee.
- 3) The extent to which vacant properties in the municipality may contribute to the cost of existing public facilities has been evaluated. A revenue credit for parks and public safety infrastructure is provided in the impact fee methodologies.
- 4) The relative extent to which properties will make future contributions to the cost of existing public facilities has also been addressed in principal payment credits included in the impact fee calculations.
- 5) Spanish Fork City will evaluate the extent to which newly developed properties are entitled to a credit for common facilities that have been provided by owners or developers as compared to common facilities provided by the City in other parts of the municipality. These "site-specific" credits will be available for system improvements identified in the Capital Facilities Plans.
- 6) Citywide service areas are appropriate for the types of public facilities included in the impact fees study. Extraordinary costs, if any, in servicing newly developed properties will be addressed through administrative procedures that allow independent studies to be submitted to the City.
- 7) The time-price differential inherent in fair comparisons of amounts paid at different times has been addressed in the evaluation of credits for

future principal payments. All costs in the impact fee calculations are given in current dollars with no assumed inflation rate over time. Necessary cost adjustments can be made as part of the periodic evaluation and update of impact fees.

Implementation and Administration

Along with the required annual report, impact fees should be evaluated and updated to reflect recent data. One approach is to adjust for inflation in construction costs by means of an index like the one published by Engineering News Record (ENR). This index can be applied against the calculated impact fee. If cost estimates change significantly, the City should recalculate the fees. Another possible change in calculation will occur if the City bond-finances infrastructure that receives impact fee funding.

As specified in the Impact Fees Act, there are certain accounting requirements that will be met by Spanish Fork City. Impact fees must be deposited in separate interest bearing ledger accounts. Fees should be spent within six years of when they are collected, with the expenditures limited to system improvements identified in the CFP.

impact fee methodology assumes all housing units will be occupied, thus requiring seasonal or peak population to be used when deriving infrastructure standards. Impact fees for Spanish Fork are derived using year-round population and the average number of persons per housing unit (3.65 in 2007).

TischlerBise recommends the use of two residential categories in the impact fee calculations. Differentiating impact fees by type of housing helps make the fees proportionate to the demand for public facilities. According to Census data, the housing mix in 2007 is 90% single-family units and 10% multifamily housing. The impact fee study assumes a stable housing mix over the next six years. On average, there are 3.6 persons per single-family unit and 2.8 persons per multifamily unit.

Figure A2 – Persons per Housing Unit

Units in Structure	Renter & Owner			Housing Units	Persons Per Hsg Unit	Vacancy Rate
	Persons	Hshlds	PPH			
Single Family	27,918	6,909	4.04	7,620	3.66	9.3%
Mobile Homes	281	121	2.32	121	2.32	0.0%
2+ units	2,519	764	3.30	886	2.84	13.8%
Total	30,718	7,794	3.94	8,627		
		Vacant/Seasonal HU		833		

2007 Summary by Type of Housing	Persons	Households	Persons per Household	Housing Units	Persons Per Hsg Unit	Housing Mix
Single Family	28,199	7,030	4.01	7,741	3.64	90%
Multifamily	2,519	764	3.30	886	2.84	10%
Subtotal	30,718	7,794	3.94	8,627		
Group Quarters	779					Vacancy Rate
TOTAL	31,497	7,794		8,627	3.65	9.7%

Source: 2006-2008 American Community Survey, U.S. Census Bureau.

Demand Indicators by Size of Detached Housing

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’s website. TischlerBise used American Community Survey (ACS) 2006-2008 data for Spanish Fork to derive custom average weekday vehicle trip ends by type of housing, as shown in Figure A3. A vehicle trip end represents a vehicle either entering or exiting a development, as if a traffic counter were placed across a driveway.

Figure A3 - Vehicle Trip Generation Rates by Type of Housing

Spanish Fork, Utah		Households (2)			Vehicles per Household by Tenure
		Single Family Units	Multifamily Units	Total	
Owner-occupied	Vehicles Available (1)	5,810	105	5,915	2.33
Renter-occupied		1,220	659	1,879	1.82
TOTAL		7,030	764	7,794	2.20
Housing Units (6) =>		7,741	886	8,627	

	Persons (3)	Trip Ends (4)	Vehicles by Type of Housing		Average Trip Ends	Trip Ends per Housing Unit
				Trip Ends (5)		
Single Family Units	28,199	73,033	15,735	90,956	81,995	10.6
Multifamily Units	2,519	8,676	1,443	5,978	7,327	8.3
TOTAL	30,718	81,710	17,178	96,934	89,322	10.4

- (1) Vehicles available by tenure from Table B25046, American Community Survey, 2006-2008.
- (2) Households by tenure and units in structure from Table C25032, American Community Survey, 2006-2008.
- (3) Persons by units in structure from Table B25033, American Community Survey, 2006-2008.
- (4) Vehicle trips ends based on persons using formulas from Trip Generation (ITE 2008). 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 51 and the equation result multiplied by 51. For multifamily housing (ITE 220), the fitted curve equation is $(3.47 * persons) - 64.48$.
- (5) Vehicle trip ends based on vehicles available using formulas from Trip Generation (ITE 2008). 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 61 and the equation result multiplied by 61. For multifamily housing (ITE 220), the fitted curve equation is $(3.94 * vehicles) + 293.58$.
- (6) Housing units from Table B25024, American Community Survey, 2006-2008.

Custom tabulations of demographic data by bedroom range can be created from survey responses provided by the U.S. Census Bureau in files known as Public Use Micro-data Samples (PUMS). Because PUMS data are only available for areas of roughly 100,000 persons, the City of Spanish Fork is in Public Use Micro-data Area (PUMA) 00603, which covers all of Utah County except the urbanized areas in and around Orem and Provo. As shown in Figure A4, TischlerBise derived trip generation rates and average persons, by bedroom range, using the number of persons and vehicles available. Recommended multipliers were scaled to make the average value by type of housing for PUMA 00603 match the average value derived from ACS data specific to Spanish Fork.

Figure A4 – Average Weekday Vehicle Trips and Persons by Bedroom Range

Spanish Fork, Utah	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	Persons per Housing Unit
Single Family 0-2 Bdrms	309	1,055	271	1,610	1,332	150	7.7	2.0
Single Family 3 Bdrms	1,732	5,062	1,182	6,918	5,990	558	9.3	3.1
Single Family 4 Bdrms	1,762	5,142	1,152	6,745	5,943	481	10.7	3.6
Single Family 5+ Bdrms	2,695	7,569	1,558	9,094	8,332	582	12.4	4.6
Single Family Subtotal	6,498	18,828	4,163	24,367	21,597	1,771	10.6	3.6
Multifamily Subtotal	294		180			112	8.3	2.8
GRAND TOTAL	6,792		4,343			1,883		

- (1) American Community Survey, Public Use Microdata Sample for UT PUMA 00603 (unweighted data for 2006-2008).
- (2) Vehicle trips ends based on persons using formulas from Trip Generation (ITE 2008). 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 12 and the equation result multiplied by 12.
- (3) Vehicle trip ends based on vehicles available using formulas from Trip Generation (ITE 2008). 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 16 and the equation result multiplied by 16.
- (4) Recommended multipliers are scaled to make the average value by type and size of single family housing for PUMA 00603 match the average value derived for the City of Spanish Fork from American Community Survey 2006-2008 data.

Trip Generation by Single Family House Size

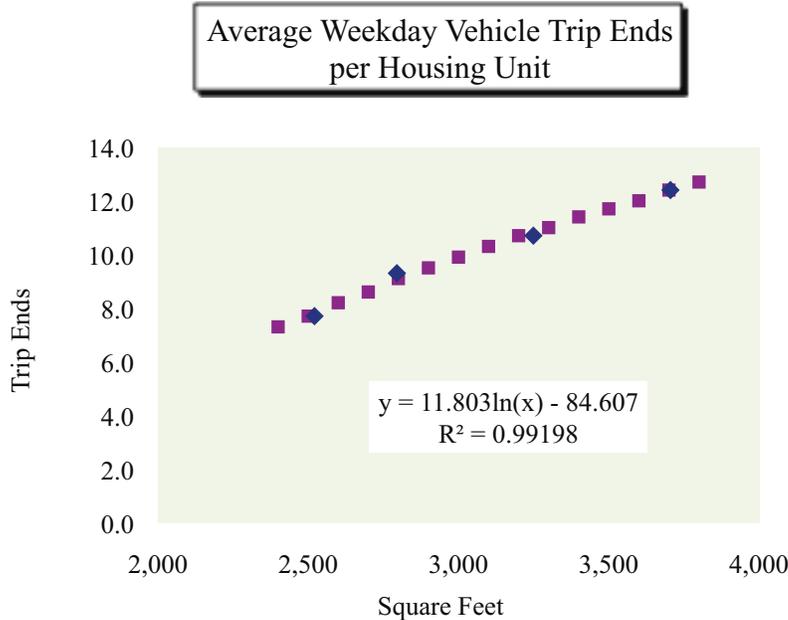
To vehicle trip ends by square feet of single-family housing TischlerBise combined demographic data from the Census Bureau and house size data on single-family units built in Spanish Fork from 2001 through 2009, obtained from Utah County property tax records. The number of bedrooms per housing unit is the common connection between the two databases. In Spanish Fork, the average size, single-family housing unit with two or less bedrooms has 2,521 square feet of floor area. The average size of a three-bedroom unit is 2,795 square feet of floor area. Four-bedroom units average 3,249 square feet and single-family housings with five or more bedrooms average 3,705 square feet of floor area. The weighted average for all single-family units is approximately 2900 square feet of total floor area (i.e., main and upper floors plus basement).

Average floor area and number of vehicle trip ends by bedroom range are plotted in Figure A5, with a logarithmic trend line derived from the four actual averages in the City of Spanish Fork. TischlerBise used the trend line formula to derive estimated average weekday trip ends by size of single-family housing unit, in 100 square feet intervals. The average size unit of 2900 square feet has a trip generation rate 9.5, which is similar to the national average trip generation rate for single family housing (i.e., 9.57 vehicle trip ends on an average weekday).

Figure A5 – Vehicle Trips by Single Family Floor Area

Spanish Fork, Utah

<i>Actual Averages</i>				
<i>Bedrooms</i>	<i>Square Feet</i>	<i>Trip Ends</i>	<i>Square Feet</i>	<i>Trip Ends</i>
two or less	2,521	7.7	2,400	7.3
three	2,795	9.3	2,500	7.7
four	3,249	10.7	2,600	8.2
five or more	3,705	12.4	2,700	8.6
			2,800	9.1
			2,900	9.5
			3,000	9.9
			3,100	10.3
			3,200	10.7
			3,300	11.0
			3,400	11.4
			3,500	11.7
			3,600	12.0
			3,700	12.4
			3,800	12.7



Average Number of Persons by Single-Family House Size

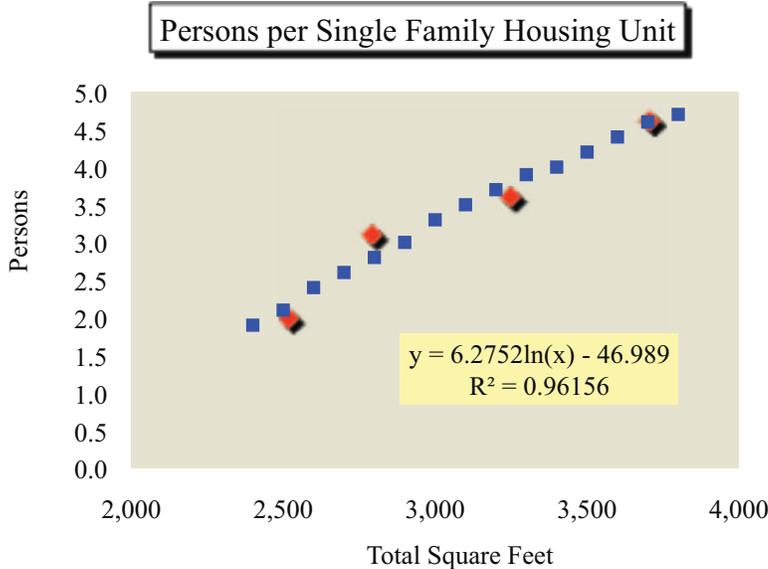
The same data sources and methodologies were used to derive average number of persons by size of single-family housing. Average floor area and number of persons by bedroom range are plotted in Figure A6, with a logarithmic trend line derived from the four actual averages in the City of Spanish Fork. Using the trend line formula shown in the chart, TischlerBise derived the estimated average number of persons, by size of single-family unit, using 100 square foot intervals. For the purpose of impact fees, TischlerBise recommends a minimum fee based on a unit size of 2400 square feet and a maximum fee based on a unit size of 3,800 square feet.

Figure A6 – Persons by Single Family Floor Area

Spanish Fork, Utah

	<i>Averages in Spanish Fork</i>			<i>Per Housing Unit</i>	
	<i>Bedrooms</i>	<i>Square Feet</i>	<i>Persons</i>	<i>Square Feet</i>	<i>Persons</i>
	two or less	2,521	2.0	2,400	1.9
	three	2,795	3.1	2,500	2.1
	four	3,249	3.6	2,600	2.4
	five or more	3,705	4.6	2,700	2.6

Total square feet (basement, main floor and upper level) from Utah County property tax records.



2,800	2.8
2,900	3.0
3,000	3.3
3,100	3.5
3,200	3.7
3,300	3.9
3,400	4.0
3,500	4.2
3,600	4.4
3,700	4.6
3,800	4.7

Recent Residential Construction

Figure A7 provides 2007 estimates of population and housing units based on ACS data. From 2000 to 2007, Spanish Fork increased by an average of 401 housing units per year. In contrast, Utah County property tax records indicate 219 single-family housing units were constructed in 2009.

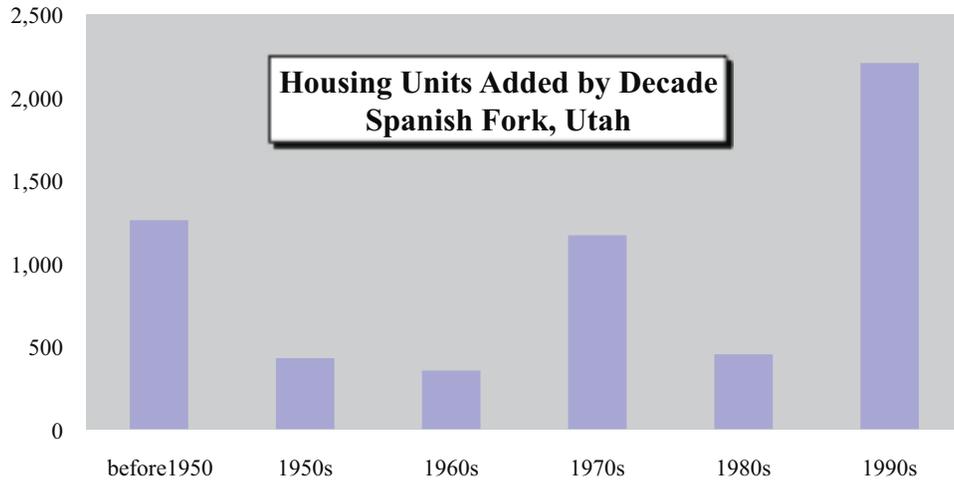
The chart at the bottom of Figure A7 indicates the estimated number of housing units added by decade in the City of Spanish Fork. Given the nationwide construction decline, Spanish Fork continues to have a healthy increase in housing units, already adding more units this decade than the increase in the 1990s.

Figure A7 – City of Spanish Fork Housing Units and Population in 2007

Spanish Fork, Utah	
US Census Bureau Population in 2007*	31,497
Housing Units in 2007*	8,627
Total Housing Units in 2000	5,818
<i>New Housing Units</i>	2,809

* American Community Survey, 2006-2008.

From 2000 to 2007, Spanish Fork added an average of 401 housing units per year.



Source: Table B25034, American Community Survey, 2006-2008.

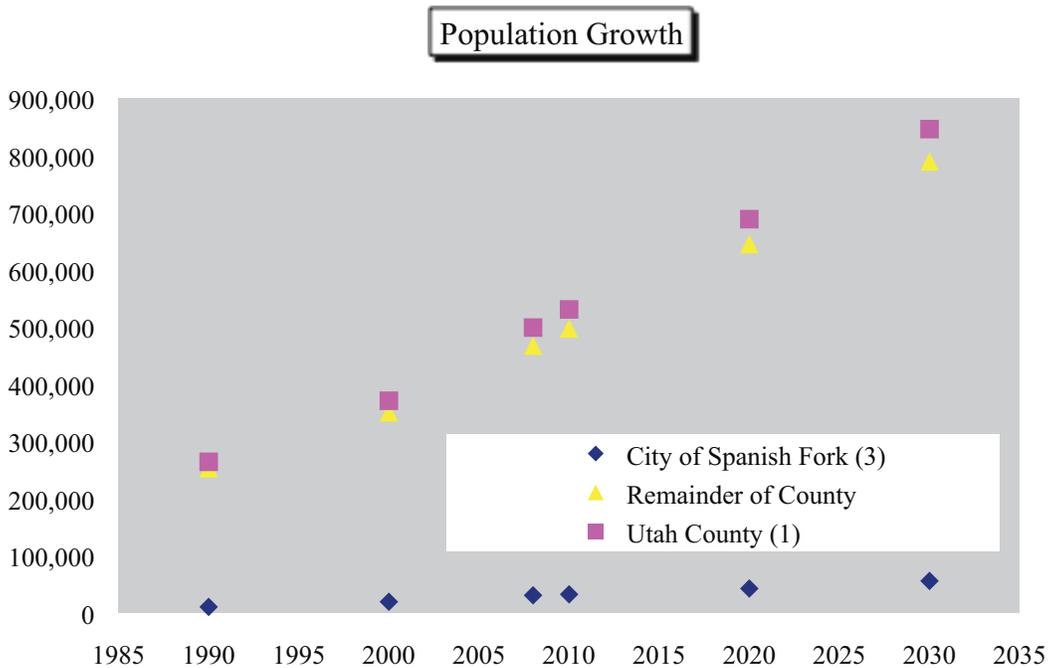
Population Projections

Figure A8 indicates the City’s share of countywide population over time. Countywide population projections are from Woods & Poole Economics (2008). Spanish Fork population data from 1990 through 2008 are from the U.S. Census Bureau. The 2030 projection for Spanish Fork is from the Utah Governor’s Office of Planning and Budget (2008 Baseline Projections). Interim year projections for 2010 and 2020 are derived using an exponential growth curve that produces smaller annual increases in the short run.

Figure A8 – City of Spanish Fork Population Share

	1990	2000	2008	2010	2020	2030
Utah County (1)	264,893	371,664	499,590	531,307	689,059	846,555
Utah County (2)				560,511	727,718	907,210
City of Spanish Fork (3)	11,272	20,246	31,538	33,263	43,409	56,651
Remainder of County	253,621	351,418	468,052	498,044	645,650	789,904
Spanish Fork Share	4.3%	5.4%	6.3%	6.3%	6.3%	6.7%

Sources: (1) Woods & Poole Economics (2008). (2) Governor's Office of Planning and Budget, 2008 Baseline Projections. (3) U.S. Census Bureau data 1990-2008. 2030 Spanish Fork projection from 2008 Baseline Projections.



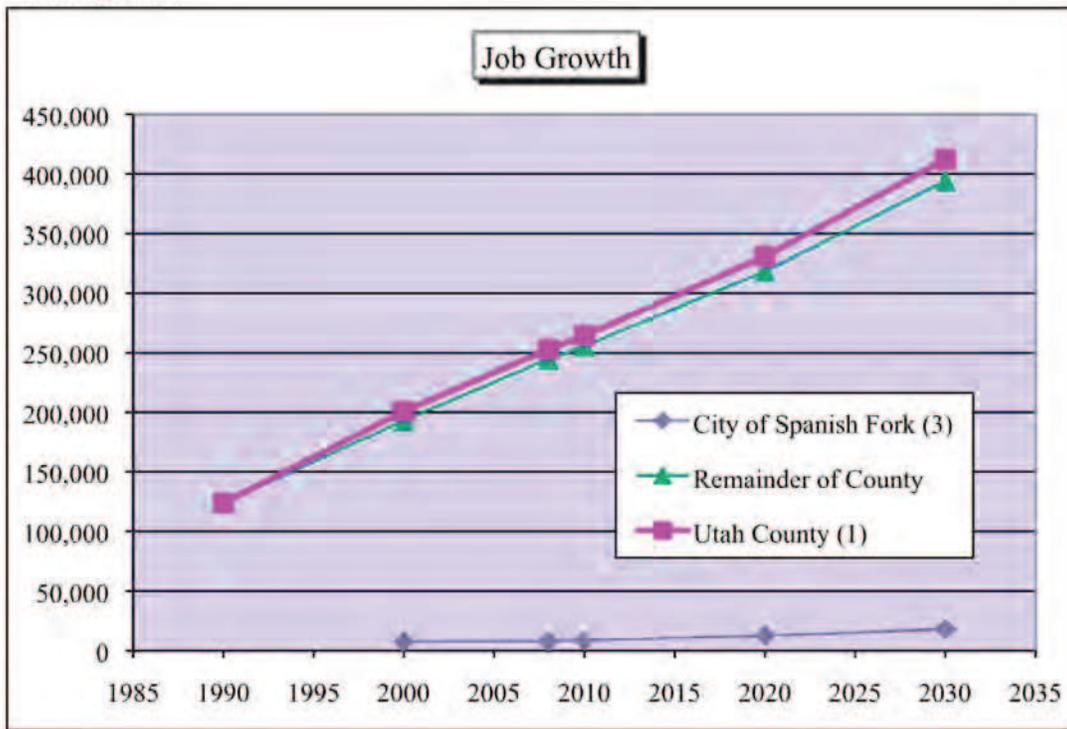
Jobs by Place of Work

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. Similar to the population share evaluation discussed above, countywide jobs are shown in Figure A9 along with the City of Spanish Fork’s job share. Countywide job projections are from Woods & Poole Economics (2008). The 2008 job estimate for the City of Spanish Fork is from the U.S. Census Bureau web application OnTheMap4. The 2030 projection of jobs in Spanish Fork assumes a slight increase in the jobs-to-housing ratio over the next 20 years, as shown in Figure A11 below.

Figure A9 – Spanish Fork Job Share

	1990	2000	2008	2010	2020	2030
Utah County (1)	124,004	200,789	252,758	264,429	330,711	411,987
Utah County (2)				283,915	373,848	459,981
City of Spanish Fork (3)		7,695	8,155	8,764	12,560	18,000
Remainder of County	124,004	193,094	244,603	255,665	318,151	393,987
Spanish Fork Share	0.0%	3.8%	3.2%	3.3%	3.8%	4.4%

Sources: (1) Woods & Poole Economics (2008). (2) Governor's Office of Planning and Budget, 2008 Baseline Projections. (3) 2000 from Census Transportation Planning Package and 2008 from OnTheMap4 web application. 2030 projection assumes a slight increase in the jobs-to-housing ratio.



Nonresidential Demand Indicators

To convert jobs to floor area of nonresidential development, TischlerBise uses average square feet per employee multipliers, as shown in Figure A10. 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 restaurant jobs is a discount club (i.e. big box retail). For all other services, the prototype is a general office building with 199,000 square feet of floor area (i.e., the average size for all offices in the ITE database). For goods-producing jobs, the prototype is manufacturing.

Figure A10 – 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
Commercial / Shopping Center						
820	Average	1,000 Sq Ft	42.94	na	2.00	500
857	Discount Club	1,000 Sq Ft	41.80	32.21	1.30	771
General Office						
710	Average	1,000 Sq Ft	11.01	3.32	3.32	302
Other Nonresidential						
770	Business Park***	1,000 Sq Ft	12.76	4.04	3.16	317
760	Research & Dev Center	1,000 Sq Ft	8.11	2.77	2.93	342
610	Hospital	1,000 Sq Ft	16.50	5.20	3.17	315
565	Day Care	student	4.48	28.13	0.16	na
550	University/College	student	2.38	9.13	0.26	na
530	High School	student	1.71	19.74	0.09	na
520	Elementary School	student	1.29	15.71	0.08	na
520	Elementary School	1,000 Sq Ft	15.43	15.71	0.98	1,018
320	Lodging	room	5.63	12.81	0.44	na
254	Assisted Living	bed	2.66	3.93	0.68	na
151	Mini-Warehouse	1,000 Sq Ft	2.50	61.90	0.04	24,760
150	Warehousing	1,000 Sq Ft	3.56	3.89	0.92	1,093
140	Manufacturing	1,000 Sq Ft	3.82	2.13	1.79	558
110	Light Industrial	1,000 Sq Ft	6.97	3.02	2.31	433

* Trip Generation, Institute of Transportation Engineers, 2008.

** Employees per demand unit calculated from trip rates, except for Shopping Center data, which are derived from Development Handbook and Dollars and Cents of Shopping Centers, published by the Urban Land Institute.

*** According to ITE, a Business Park is a group of flex-type buildings served by a common roadway system. The tenant space includes a variety of uses with an average mix of 20-30% office/commercial and 70-80% industrial/warehousing.

Development Projections

Key demographic data for the impact fee study are shown in Figure A12. Cumulative data are shown in the top section and annual increases at the bottom of the table. Annual population and job projections are derived using exponential growth curves that yield slower annual increases in the short-term. Population was converted to housing units using a constant ratio of 3.65 persons-per-housing unit.

Spanish Fork’s current job mix was derived from two-digit NAICS codes obtained from the U.S. Census Bureau web application OnTheMap4. The impact fee study assumes the mix of jobs in Spanish Fork remains stable over the next 20 years. Converting jobs to floor area indicates approximately 3.86 million square feet of nonresidential buildings in 2008. From 2009 to 2030, nonresidential floor area in the City of Spanish Fork is projected to increase by approximately 215,000 square feet per year, as shown in the lower-right corner of the table below.

Figure A11 – Detailed Demographic Data

Spanish Fork, Utah <i>Cumulative</i>	2000	FY09-10											
	Census	2008	2009	2010	2011	2012	2013	2014	2015	2030			
		Base Yr	1	2	3	4	5	6	21				
Population	20,246	31,538	32,389	33,263	34,160	35,082	36,029	37,001	37,999	56,651			
Jobs	7,695	8,155	8,454	8,764	9,085	9,418	9,763	10,120	10,491	18,000			
Housing Units	5,818	8,638	8,871	9,111	9,356	9,609	9,868	10,135	10,408	15,517			
Jobs to Housing Ratio	1.32	0.94	0.95	0.96	0.97	0.98	0.99	1.00	1.01	1.16			
Persons per Hsg Unit	3.48	3.65	3.65	3.65	3.65	3.65	3.65	3.65	3.65	3.65			
Nonres Sq Ft in thousands (KSF)													
Retail / Restaurant		1,164	1,207	1,251	1,297	1,345	1,394	1,445	1,498	2,570			
All Other Services		1,194	1,238	1,284	1,331	1,379	1,430	1,482	1,537	2,636			
Industrial		1,501	1,556	1,613	1,672	1,733	1,797	1,863	1,931	3,313			
Total		3,860	4,001	4,148	4,300	4,457	4,621	4,790	4,965	8,519			
Avg Sq Ft Per Job		473	473	473	473	473	473	473	473	473			
										2009-2030			
Annual Increase							09-10	10-11	11-12	12-13	13-14	14-15	Avg Anl
Population							874	897	922	947	972	998	1,155
Jobs							310	321	333	345	357	371	455
Housing Units							240	245	253	259	267	273	316
Retail / Restaurant KSF							44	46	48	49	51	53	65
All Other Services KSF							45	47	49	51	52	54	67
Industrial KSF							57	59	61	64	66	68	84
Total KSF/Yr =>						147	152	158	163	169	176	215	