FINAL VERSION
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TIMPANOGOS SPECIAL SERVICE DISTRICT

WASTEWATER RATE ANALYSIS

JUNE 2009

PREPARED BY:

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EXECUTIVE SUMMARY

Timpanogos Special Service District (the "District") has retained Lewis Young Robertson & Burningham Inc. ("LYRB") to perform a Wastewater User Rate Analysis to determine (if necessary) an equitable modification to the District's existing wastewater rate structure that will define the costs of service for the District as a whole referred to as the Service Area. The District serves the communities of: Alpine, Highland, Cedar Hills, American Fork, Pleasant Grove, Lehi, Saratoga Springs, and parts of Vineyard, Eagle Mountain, South Valley Sewer District and Draper. As a wholesale provider of wastewater treatment services, the District finds itself in need of a major capital investment, consisting of an 11.7 MGD plant expansion. To that end, the District recognizes the need to evaluate the fees and charges of its wastewater utility system. LYRB submits this written analysis and accompanying tables to describe the current status of the enterprise fund and to recommend wastewater user fees to be adopted by the District Board.

The District is solely reliant upon user fees to fund operations of the wastewater utility system. Impact fees, collected by each Participating Member, are collected and remitted to the District and used to fund capital projects related to growth (refer to 2009 Impact Fees update). The District does not impose property tax to fund any capital or operational needs. As such, it is imperative that the District evaluate its user system rates and charges to ensure revenue sufficiency and equitable distribution of operating costs.

It is the intent of this analysis to ensure that the proposed rates follow defensible methodologies based on reasonable planning, cost and demand projections. It is important that the rates be defensible and the assumptions documented to ensure that the rates charged per gallon of flow (volume) and strength (units) cover only their fair share of the cost of providing the service. Rates are based upon cost of service principles and are set to recover only the costs and revenue requirements needed to maintain a viable utility. The methodology used in the rate structuring is called the "CASH NEEDS APPROACH" which focuses on actual cash expenses that the District incurs in providing service to its customers and includes depreciation as a way to build sufficient capital reserves to meet future repair and maintenance obligations.

Another goal of this analysis is to maintain revenue-neutrality, meaning that the proposed annual rates do not inflate the revenues generated by user rates beyond what is needed to operate the system and maintain adequate debt related coverage ratios and establishes stabilization reserves. Impact fee revenues have been considered in the multi-year cash flow model as the primary source to defray growth related capital infrastructure and the District has committed to periodically evaluate the level of impact fees to ensure adequate revenues to cover capital expenses.

PROJECTED REVENUE REQUIREMENT

Wastewater Revenue Requirement

A revenue requirement analysis is intended to show, with actual historic and reasonable projected numbers, the amount of operating and non-operating revenues needed to sufficiently cover the annual operating and non-operating expenses, upcoming capital expenditures, bond covenants, annual debt service payments, and any other expenses that are deemed necessary and prudent in the administration of a wastewater utility system. Figure ES.1 shows a summary of the expenditures anticipated in the wastewater fund and the revenues that will allow the District to maintain a self-sufficient wastewater enterprise fund.

Figure ES.1: Annual Wastewater Revenues and Expenses

	2007	2008	2009	2010	2011	2012
Total Operating Revenues	$ 7,509,610	$ 8,754,180	$ 9,639,713	$ 12,186,539	$ 13,765,977	$ 14,192,771
Total Operating Expenses	(5,873,542)	(6,881,684)	(8,185,918)	(9,251,532)	(10,635,978)	(10,923,407)
Net Operating Income	1,636,068	1,872,496	1,453,795	2,935,007	3,129,999	3,269,365
Total Non-operating Revenues (Expenses)	11,349,179	6,640,464	4,941,845	6,650,822	6,177,922	8,540,466
TOTAL REVENUES AVAILABLE FOR DS:	12,985,247	8,512,960	6,395,640	9,585,829	9,307,921	11,809,830
TOTAL DEBT SERVICE:	1,232,909	3,242,652	2,869,490	6,931,970	6,940,510	6,958,010
DS Coverage	**10.53**	**2.63**	**2.23**	**1.38**	**1.34**	**1.70**

As described above in Figure ES.1, the District can continue to provide adequate operations and maintenance of the wastewater utility system at the recommended rate structure identified herein. The recommended rate structure presented below in Figure E.2 is sufficient to maintain revenue sufficiency through the planning period (2009-2012).

CURRENT WASTEWATER RATE STRUCTURES

Current Wastewater Rates

Given that the District is a wholesaler of wastewater treatment services, participating cities and other entities enter into contracts with the District to accept and treat effluent. The volume and strength of effluent is measured at certain points within the District's system to measure the level and strength that must be treated at the regional wastewater plant. The rate structure currently employed by the District is based on the cost of treating the flows transmitted to the treatment facility. The measurement of treatment is broken down into three categories: 1) flow volume of effluent, 2) pounds of biochemical oxygen demand (BOD), and 3) pounds of suspended solids (TSS). Items 2) and 3) are measurements related to the strength of effluent and require a more sophisticated and costly process to treat effluent. Based on this analysis, it is the recommendation that the current methodology used by the District remain in place, as it more directly relates to equity and costs of the wastewater system. Upon completion of the new treatment plant expansion and new process, it is advisable to re-evaluate the methodology to ensure a continued fair approach.

PROPOSED WASTEWATER RATE STRUCTURES

Recommended Wastewater Rates

Based on the findings of the revenue requirement analysis (which includes the capital project expenditures, growth of operations and maintenance expenses, debt service coverage requirements and cash flow needs of the District) and the recommendation to continue with the same rate methodology, the District can meet its obligations within the current monthly user rate structure.

Figure ES.2: Recommended Wastewater Rates

Cost Allocation Category	Units	Fee Per Unit			
		2009	2010	2011	2012
Flow	per 1,000 gallons	$ 1.544	$ 1.960	$ 1.960	$ 1.960
BOD	per 1 lb.	0.121	0.154	0.154	0.154
TSS	per 1 lb.	0.092	0.117	0.117	0.117

This rate analysis has been prepared by LYRB utilizing data, statistics and wastewater user information provided by the District. As actual costs are determined, it may become necessary to adjust this analysis to reflect actual data.

PROJECTED DEMANDS

Included below in Figure E.3 is the projected demand on the District's system measured in terms of 1) effluent flow, 2) BOD strength, and 3) TSS strength. This data was relied upon in analyzing the revenue requirements and sufficiency of the current rate structure. The forecasted level of demand for wastewater treatment activity is a function of population and land-uses. LYRB relied heavily upon the District and its engineers to forecast future demand related to wastewater treatment services.

Flow projections presented below in Figure ES.3 are measured by aggregating each individual communities demand factors, including growth in commercial and residential activity, land-use projections and current economic circumstances. These figures are total flow projections for each calendar year for the entire TSSD service area. The demand measurement is noted in the far right hand column.

Figure ES.3: Sewer Demand

CALENDAR YEAR TOTALS							
	2007	2008	2009	2010	2011	2012	Demand Measurement
Flow Data	4,637,717	5,139,921	5,206,243	5,272,564	5,338,886	5,504,690	1,000 Gal Unit
TSS	7,839,512	10,371,707	10,505,535	10,639,364	10,773,192	11,107,764	1 lb.
BOD	1,588,839	2,036,070	2,062,342	2,088,614	2,114,886	2,180,565	1 lb.

Based on the projected demand on the District's system and the revenue requirement analysis in Figure ES.1, the proposed rate structure outlined in Figure ES.2 is adequate to meet the demands of the system and the financial policies adopted by the District.

As described in Figure ES.4, the proposed rate structure will generate sufficient revenues to meet the financial needs for calendar years 2009-2012.

Figure ES.4 Revenue Forecast and Analysis with Current and Forecasted Rate Structure

	2008	2009	2010	2011	2012
Flow (1,000 Gal)	$ 1.23	$ 1.54	$ 1.96	$ 1.96	$ 1.96
TSS (per lb)	0.10	0.12	0.15	0.15	0.15
BOD (per lb)	0.07	0.09	0.12	0.12	0.12
Change in Rates		26%	27%	0%	0%
Calculated Revenue	$ 8,033,805	$ 9,195,338	$ 11,785,639	$ 13,353,335	$ 13,768,035
Coverage Table Target		9,195,338	11,785,639	13,353,335	13,768,035
Difference		-	-	-	-
Change in Calculated Revenues		14%	28%	13%	3%

The user rates described above in Figure ES.4 are recommended rates for TSSD in order to maintain revenue sufficiency; capital repair and replacement adequacy and maintain debt service coverage requirements associated with TSSD's outstanding obligations. Based on the analysis, TSSD will need

to increase their current user rates from $1.23 per 1,000 gallons associated with effluent flow to $1.54 per 1,000 gallons of effluent flow; increase rates associated with TSS strength from $0.10 per pound to $0.12 per pound; and increase rates associated with BOD from $0.07 per pound to $0.09 per pound. The proposed rate increases would be effective on July 1, 2009 and will remain in place until June 30, 2010.

Additionally, TSSD will need a second user rate adjustment in 2010-2011 increasing the user rate associated with flow from $1.54 per 1,000 gallons to $1.96 per 1,000 gallons; increase the user rate associated with strength as measured by TSS from $0.12 per pound to $0.15 per pound; and increase the user rate associated with BOD from $0.09 per pound to $0.12 per pound. The second rate increase would become effective July 1, 2010. After 2010 increases in revenue generated by TSSD will be a factor of increase in demand created by new connections, businesses and residential activity. As certain conditions related to the capital facilities plan, regulatory environment and usage characteristics change, TSSD may need to adjust user rates to more fully address revenue sufficiency.

In order to accurately project the revenue sufficiency created by the recommended rate structure, LYRB used the following uses of funds to determine the appropriate user rates for each period of time. In Figure ES.4 below is a summary of the operational and maintenance expenses associated with the District's policy to adequately maintain the system, cover debt service requirements and fund a proportional amount of deprecation expenses (capital repair and replacement).

Figure ES.5 Summary of Operational, Maintenance, Debt Service and Capital Repair & Replacement Requirements

OPERATING EXPENSES	2009	2010	2011	2012	2013	2014	2015
New Plant Operations Expense	-	-	(817,741)	(850,451)	(884,469)	(919,848)	(956,642)
Administration	(3,523,773)	(3,647,105)	(3,774,754)	(3,906,870)	(4,043,611)	(4,185,137)	(4,331,617)
Operations	(1,112,000)	(1,150,920)	(1,191,202)	(1,232,894)	(1,276,046)	(1,320,707)	(1,366,932)
Maintenance	(337,400)	(349,209)	(361,431)	(374,081)	(387,174)	(400,725)	(414,751)
Collections	(88,200)	(91,287)	(94,482)	(97,789)	(101,212)	(104,754)	(108,420)
PreTreatment	(23,500)	(24,323)	(25,174)	(26,055)	(26,967)	(27,911)	(28,888)
Solids Handling	(307,250)	(318,004)	(329,134)	(340,654)	(352,576)	(364,917)	(377,689)
Electrical/Instrumentation	(180,450)	(186,766)	(193,303)	(200,068)	(207,071)	(214,318)	(221,819)
Fleet	(374,100)	(387,194)	(400,745)	(414,771)	(429,288)	(444,313)	(459,864)
Laboratory	(50,750)	(52,526)	(54,365)	(56,267)	(58,237)	(60,275)	(62,385)
Depreciation and Amortization (Capital Repair & Replacement)	(2,188,495)	(3,044,199)	(3,393,647)	(3,423,505)	(3,399,306)	(3,375,517)	(3,352,134)
Total Debt Service	(2,869,490)	(6,931,970)	(6,940,510)	(6,958,010)	(6,941,790)	(6,947,990)	(6,953,435)
Total O&M and DS Expenses	(11,055,408)	(16,183,502)	(17,576,488)	(17,881,417)	(18,107,746)	(18,366,413)	(18,634,575)

SECTION I: PROJECT OVERVIEW

CHAPTER 1
STUDY OBJECTIVES AND METHODOLOGIES

The task of structuring wastewater rates can be described as more of an art than a science. Operations and capital infrastructure needs are unique to each wastewater utility. As a wholesale provider of treatment services, the District must ensure that rates are sufficient to meet District financial policies and goals and maintain adequate funding to repair and replace capital improvements. The rates must balance District financial policies while also accounting for the actual demands placed on the system and the real costs associated with operating the system to ensure that those demands are met. Each rate analysis has different goals and objectives in effectively structuring the rates to the needs of a particular utility system. This analysis describes the process followed and calculations that have led to the proposed wastewater rate structure.

To derive the cost of service for the wastewater system, LYRB has followed the process described below in structuring the wastewater rates:

1. **REVENUE REQUIREMENT ANALYSIS:** calculation and determination of appropriate revenue requirement, given operational, maintenance, capital requirements and reserve policies.
2. **COST ALLOCATION ANALYSIS:** derivation of cost allocation by function and related service demand requirements.
3. **RATE STRUCTURING AND MODELING:** development and modeling of appropriate rates and charges to maintain equity and fairness across various user classes and characteristics.

REVENUE SUFFICIENCY

In the effort to establish the requirements related to revenue, we have used a detailed cash flow model, including: 1) operations & maintenance forecasts, 2) reserve and rate stabilization objectives & policies, and 3) capital infrastructure requirements. The projected expenses and cash flow analysis projections have been modeled to ensure that all financial requirements for the costs of operations and maintenance, capital infrastructure relating to repair and replacement expense, and the coverage of annual debt service payments are met. Tax-exempt bonds which have been issued or will be issued by the District have been included in the projected costs.

A major objective in the rate study includes the desire to maintain a debt service coverage ratio of at least 1.25x, including non-operating revenues such as impact fees, and a debt service coverage ratio of at least 1.00x, excluding non-operating revenues such as impact fees. This is an important objective given the fact that recently Moody's Investor Service upgraded the District's debt rating to A2 from Baa. In order to maintain this high level credit rating, the District must ensure that rates are sufficient to cover O&M and debt service even during a period when development impact fees are absent or non-existent. As was described earlier in this chapter, District financial policy, such as the debt service coverage ratio requirement, is an important consideration in shaping the user rates and charges for the system.

LEGAL ISSUES

The District is programmed to issue bonds this year and will be required to pay debt service on the future as well as existing bonds. With each bond issue, the District must enter into covenants with bond holders to ensure that the District will always be able to pay debt service in full and in a timely manner. Additionally, the District provides a rate covenant whereby the District agrees to maintain

rates and charges at a level sufficient to service debt with at least 110% coverage. Historically, the District has maintained well in excess of the 125% coverage requirement. Operational and maintenance costs of the system are actually superior to the lien on revenues placed by bondholders. In order for the system to remain feasible, operations and maintenance is necessary and desired. In order to effectively manage the financial operations and uncertainties related to the Timpanogos system, the District has imposed certain financial policies and operations, as discussed herein.

RATE STABILIZATION FUND

On January 11, 2007, the District adopted a resolution establishing a Rate Stabilization Fund. The purpose of the Rate Stabilization Fund was to ensure that the District would have sufficient revenues to mitigate: 1) the potential downturn in economic development, which relates to development impact fees, 2) the cost associated with unforeseen operational and maintenance expenses, 3) unforeseen capital repair and replacement costs associated with the system, and 4) the impact on user rates needed to fund one-time events. The target amount of the Rate Stabilization Fund is $7,000,000 and will be revisited from time to time as circumstances of the District change.

This analysis includes the District's financial policy related to the Rate Stabilization Fund and ensures that the target amount ($7 million) remains available for the purposes intended by the District Board and administration. The recommended rates and charges include sufficient revenue to maintain the Rate Stabilization Fund at an amount sufficient to meet the District's policy.

COST ALLOCATION ANALYSIS

Historically, the District has allocated costs based on demand characteristics and not functions of service. It is true that the District provides some major collection infrastructure, but most of the capital improvement infrastructure is related to treating wastewater and therefore there is not cost allocation assigned to users based on treatment versus collection services.

Cost allocation is an important factor in setting utility rates. Like most wastewater utility systems, the District identifies a few categories which add service demand to the system. In particular, the District has identified the following three areas of demand: 1) volume of effluent; 2) strength (measured by Biochemical Oxygen Demand or BOD); and 3) strength (measured by suspended solids or TSS). Costs of operating the wastewater treatment system, capital costs associated with expansion of system facilities, revenue requirements, and debt service reserve requirements are driven by allocating costs across all users based on each customer's measurement within these categories. Although, the District is a wholesale provider of wastewater services, effluent is measured and customers are charged based on this cost allocation methodology.

The District may face certain regulatory requirements which may create additional demands on user rates. These regulatory requirements include but are not limited to the need to treat additional levels of nutrient removal such as ammonia and phosphorus. These additional requirements will most likely create additional costs associated with both the capital components of the District's system and the operational aspects as well. As the District approaches these potential issues, it is the recommendation of this study that further investigation and financial structuring be reviewed in order to maintain financial solvency and health.

It is the finding of this study that the basis for cost allocation currently employed by the District is ***generally*** equitable, fair, and reasonably relates to the demand placed on the utility system. However, it is the suggestion of this analysis that greater cost allocation be completed in order to appropriately assign costs associated with flow and strength of effluent. This exercise will ensure that all users of

the system are equitably paying for their proportional share of the operational and capital costs of the system.

RATE STRUCTURING AND MODELING

The next step in the rate structuring process is the development of a financial model, which incorporates 1) revenue sufficiency requirements, 2) District financial and legal policies and requirements, 3) cost allocation practices, and 4) operating and capital budget requirements. In this user rate analysis certain trend observations were applied, coupled with capital facility planning information submitted by Bowen & Collins Engineers (the District's Engineer).

The rate modeling begins with the projection of future demand on the system. This is quantified by several measurements, including: future population, household sizes, type of land use and development, future number of equivalent residential users, amount of future volume of wastewater demand, and projected strength of effluent. The Capital Facilities Plan, prepared by Bowen & Collins identified certain infrastructure necessary to meet these demands over the course of the next 10-15 year period. Additionally, a trend analysis was used to project future operational and maintenance costs associated with maintaining the system and servicing customers.

Once operations and maintenance and capital infrastructure projections are made, we create a model to incorporate other financial requirements and policies, such as debt service coverage, rate stabilization reserves, repair and replacement levels and future anticipated increases in cost of services. The bottom-line number is a revenue requirement figure. In essence this figure is the minimum amount necessary to maintain the integrity of the system for O&M, capital outlay and debt service requirements.

This model will serve the District throughout the planning horizon and can be modified and adjusted for variations in the assumptions used to determine the rate structure. This rate structuring model is covered in greater detail in subsequent chapters.

CHAPTER 2
OVERVIEW OF THE DISTRICT AND THE WASTEWATER SYSTEM

OVERVIEW OF PROJECTED GROWTH IN THE DISTRICT

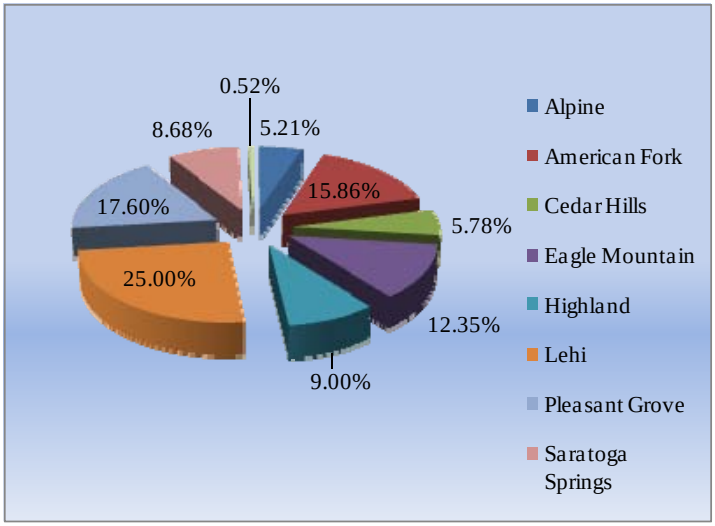
Population

Timpanogos Special Service District is located in northern Utah County and serves the communities of Alpine, Cedar Hills, American Fork, Highland, Pleasant Grove, Lehi, Saratoga Springs, part of Eagle Mountain and Vineyard, and a portion of the South Valley Sewer District (portion of Draper City). The District has experienced tremendous growth over the past two decades. Currently, the majority of the growth is occurring in the western part of the District in the cities of Lehi, Saratoga Springs and Eagle Mountain.

The District currently serves a population nearing 190,000. Provided below is a population summary, by community, which is currently served by the District. The largest communities within the District include Lehi, Pleasant Grove and American Fork, which account for nearly 60% of the District's customers. Although historically these communities have represented the largest segment of District customers it is anticipated that over the next 10-15 years the population will shift so that Lehi, Eagle Mountain and Saratoga Springs will be among the largest communities within the District.

City	2009 Population Estimates	% of District's Customer Base
Alpine	9,687	5.21%
American Fork	29,520	15.86%
Cedar Hills	10,750	5.78%
Eagle Mountain	22,984	12.35%
Highland	16,751	9.00%
Lehi	46,512	25.00%
Pleasant Grove	32,750	17.60%
Saratoga Springs	16,150	8.68%
South Valley*	970	0.52%
TOTAL:	**186,074**	**100%**

Source: Governor's Office of Planning & Budget
* TSSD



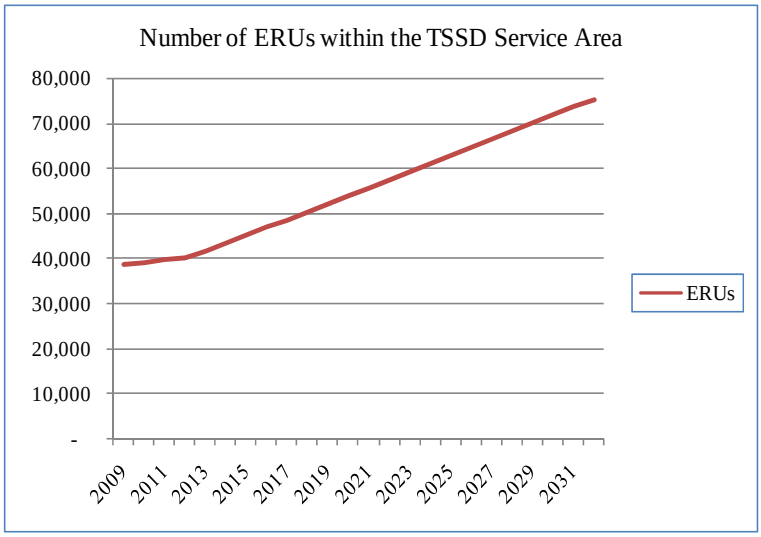
Demand Measured in Equivalent Residential Units

The District currently serves approximately 38,750 ERUs based on one ERU disposing approximately 400 gallons per day of wastewater to the District's treatment plant. Bowen & Collins has constructed a detailed model projecting the future demand on the District's wastewater treatment facility.

Included below in Figure 2.1 is an overview of the projected demand and growth related to new ERUs within the District's service area. It is important to note that the timing of this demand may be accelerated or deferred based on many factors including: economic outlook, availability of land, type of land uses, capital markets and demographics.

Figure 2.1: Projected Growth in ERUs

Year	ERUs	ERUs Added per	% Increase
2009	38,750		
2010	39,250	500	1.29%
2011	39,750	500	1.27%
2012	40,250	500	1.26%
2013	41,500	1,250	3.11%
2014	43,280	1,780	4.29%
2015	45,060	1,780	4.11%
2016	46,840	1,780	3.95%
2017	48,620	1,780	3.80%
2018	50,400	1,780	3.66%
2019	52,180	1,780	3.53%
2020	53,960	1,780	3.41%
2021	55,740	1,780	3.30%
2022	57,520	1,780	3.19%
2023	59,300	1,780	3.09%
2024	61,080	1,780	3.00%
2025	62,860	1,780	2.91%
2026	64,640	1,780	2.83%
2027	66,420	1,780	2.75%
2028	68,200	1,780	2.68%
2029	69,980	1,780	2.61%
2030	71,760	1,780	2.54%
2031	73,540	1,780	2.48%
2032	75,000	1,460	1.99%



TIMPANOGOS SPECIAL SERVICE DISTRICT WASTEWATER SYSTEM DESCRIPTION

Wastewater Collection

The District owns and operates its own wastewater collection system which provides service throughout the entire District.

Wastewater Treatment

Timpanogos Special Service District treatment facility has a capacity of 18.3 MGD, which will be expanded to 30 MGD within the next 5-10 years. The users of the facility are currently producing approximately 15.5 MGD or 38,750 ERUs.

FUTURE DEMANDS ON THE WASTEWATER SYSTEM

Figure 2.2: Projected Wastewater Demands within the District

CALENDAR YEAR TOTALS							
	2007	2008	2009	2010	2011	2012	Demand Measurement
Flow Data	4,637,717	5,139,921	5,206,243	5,272,564	5,338,886	5,504,690	1,000 Gal Unit
TSS	7,839,512	10,371,707	10,505,535	10,639,364	10,773,192	11,107,764	1 lb.
BOD	1,588,839	2,036,070	2,062,342	2,088,614	2,114,886	2,180,565	1 lb.

SECTION II: REVENUE REQUIREMENT ANALYSIS AND COST IDENTIFICATION

CHAPTER 3
WASTEWATER ENTERPRISE FUND AND REVENUE REQUIREMENT

WASTEWATER ENTERPRISE FUND

The Wastewater Enterprise Fund presented in this Analysis has been modeled using the District's audited financial statements and budget worksheets.

PROJECTING WASTEWATER REVENUES

Historic wastewater revenues were taken from the District's audited financial statements from FY 2007 to 2012. The future wastewater revenues are projected based upon a simple revenue model using the recommended wastewater rates applied to the projected growth of wastewater users within the District.

TOTAL WASTEWATER REVENUE REQUIREMENT

Figure 3.1: Annual Wastewater User Fee Revenues and Expenses

	2007	2008	2009	2010	2011	2012
Total Operating Revenues	$ 7,509,610	$ 8,754,180	$ 9,639,713	$ 12,186,539	$ 13,765,977	$ 14,192,771
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DS Coverage	**10.53**	**2.63**	**2.23**	**1.38**	**1.34**	**1.70**

TOTAL WASTEWATER REVENUE: USER RATES AND IMPACT FEES

In order to effectively finance the infrastructure needs of the District, the District has incorporated two primary revenue sources into its financial model. User rates (as described in this analysis) are the primary revenue source available to defray the costs of the system, including operations, administration, debt service and capital repair and replacement. However, the District recognizes that in order to provide equity and fairness it needs to assess development impact fees in order to defray the proportional share of costs associated with growth-driven capital infrastructure.

It is important to note that the user rate analysis deployed by LYRB herein is based on specific assumptions related to the timing and level of growth activities, which includes the level of anticipated impact fee revenues over the next five to seven year period. Provided below in Figure 3.2 is a summary of the anticipated revenues of both the primary source of income: user fees and the secondary source of income: impact fees.

Figure 3.2: Forecast of Revenues for TSSD: User Rates and Impact Fees

OPERATING REVENUES	2009	2010	2011	2012	2013	2014	2015
Wastewater Treatment Income	9,195,338	11,785,639	13,353,335	13,768,035	14,358,457	14,948,879	15,539,301
Micron RDA Revenues	54,875	-	-	-	-	-	-
Compost Sales and Green Waste Fees	380,000	391,400	403,142	415,236	427,693	440,524	453,740
Other Operating Revenue	9,500	9,500	9,500	9,500	9,500	9,500	9,500
Total Operating Revenues	9,639,713	12,186,539	13,765,977	14,192,771	14,795,650	15,398,903	16,002,541
Development Impact Fees	1,909,000	1,909,000	1,909,000	4,772,500	6,794,769	6,794,769	6,794,769
TOTAL OPERATING REVENUE AND IMPACT FEES:	11,548,713	14,095,539	15,674,977	18,965,271	21,590,419	22,193,672	22,797,310

CHAPTER 4
WASTEWATER CAPITAL PROJECTS AND DEBT

CAPITAL FACILITIES PLANNING

The Capital Facilities Plan prepared by Bowen, Collins & Associates, Inc. and adopted by the District on May 21, 2009 details the capital projects that will be constructed to maintain, upgrade and add capacity to the existing wastewater system through build-out. The projects included in this analysis are the projects that will be constructed now through FY 2011 to ensure that the level of service set by the District is maintained for existing development within the District. The growth related capital projects have been included in the Impact Fee Analysis and excluded from this study.

WASTEWATER CAPITAL PROJECTS

The District will need to construct projects in the amount of approximately $86.6 million in the next five years, of which, approximately $40 million in construction year costs will be recovered through the proposed user rate structure.

Figure 4.1: Wastewater Capital Expenses

	Project Location	Construction Year Cost
	WWTP Expansion	$ 82,520,000
	Lehi Outfall Line Repair	3,280,000
	Boat Harbor Lift Station Replacement	5,655,000
	Alpine/Highland Line Segment 2	5,370,000
	Alpine/Highland Line Segment 3A&B	6,612,000
	Pleasant Grove/Cedar Hills Outfall	467,000
	Pleasant Grove/Cedar Hills Outfall	500,000
	Suncrest Lift Station Upgrade	368,000
	Land Acquisition	2,000,000
Totals		**$ 106,772,000**

OUTSTANDING WASTEWATER SYSTEM DEBT

The District has four outstanding debt issues to factor into the proposed rates. The first is a low interest (4%) State Loan, issued in 1994, used to finance certain wastewater improvements and will be paid off in 2009. The District then issued Series 1996A and 1996B Revenue Bonds to assist with an expansion of the wastewater treatment facility. In 1998, the District participated in a Utah Water Finance Agency (UWFA) bond issue to fund various wastewater system improvements.

PROPOSED WASTEWATER DEBT

Given the capital expenses the District is faced with over the next five years in order to complete the treatment facility expansion, it is proposed that the District consider the issuance of Wastewater Revenue Bonds in 2009 to level the fund's cash flows. This bond issue will be discussed below.

Proposed Series 2009 Bonds

In order for the District to fund the full capital improvement program over the next five years and maintain a positive fund balance, the District will be required to fund a portion of the cost through methods other than cash funding. Figure 4.2 shows the proposed debt schedule of the Series 2009 Sewer Revenue Bonds with a 25 year maturity, a par amount of $57,000,000 and a true interest cost of 5.14%.

Figure 4.2: Proposed Series 2009 Bonds

$57,000,000
Timpanogos Special Service District, UTAH
Enterprise Fund Revenue Bonds
Series 2009

NET DEBT SERVICE SCHEDULE

Date	Principal	Interest	Total P+I
2010	1,290,000	2,798,860	4,088,860
2011	1,435,000	2,654,476	4,089,476
2012	1,465,000	2,622,763	4,087,763
2013	1,500,000	2,586,724	4,086,724
2014	1,545,000	2,545,024	4,090,024
2015	1,590,000	2,498,674	4,088,674
2016	1,640,000	2,446,363	4,086,363
2017	1,700,000	2,388,635	4,088,635
2018	1,765,000	2,325,225	4,090,225
2019	1,830,000	2,255,684	4,085,684
2020	1,910,000	2,179,922	4,089,922
2021	1,990,000	2,095,500	4,085,500
2022	2,085,000	2,003,363	4,088,363
2023	2,185,000	1,903,700	4,088,700
2024	2,290,000	1,795,761	4,085,761
2025	2,405,000	1,681,490	4,086,490
2026	2,530,000	1,557,151	4,087,151
2027	2,665,000	1,423,314	4,088,314
2028	2,805,000	1,280,470	4,085,470
2029	2,960,000	1,129,842	4,089,842
2030	3,120,000	970,298	4,090,298
2031	3,290,000	799,322	4,089,322
2032	3,470,000	616,727	4,086,727
2033	3,665,000	423,101	4,088,101
2034	3,870,000	217,494	4,087,494
Total	$ 57,000,000	$ 45,199,874	$ 102,199,874

SECTION IV WASTEWATER COST OF SERVICE ANALYSIS

CHAPTER 5
WASTEWATER COST ALLOCATION

CURRENT WASTEWATER RATES

The District's wastewater user rate structure is simple, as the rates are charged to the customers, which in the case of the District, the customers are the individual Cities that receive service from the District, and therefore the monthly rates are charged directly to the Cities served by the District on a wholesale basis, assessing the rates based on total usage (flow) and the strengths of the flow (TSS/BOD). The usage and strength is calculated and the individual City is charged accordingly.

CURRENT WASTEWATER RATE COST ALLOCATION

The cost of service allocation analysis includes three basic key steps. These steps are 1) Functionalization of the Revenue Requirement, 2) Classification of Demands, and 3) the Allocation of Costs to Customers. The result for wastewater is the total costs that each wastewater customer must pay through rates to ensure that the revenue requirement is met. This process is intended to accurately and equitably allocate the costs of the revenue requirement to each customer according to the impact that each places upon the system. The costs to each wholesale customer are uniform across the entire service area as the service standard is identical for each customer (City). Therefore, the cost allocation analysis simply ensures that all expenses incurred by the District, including debt and capital expenses, are covered by the wholesale rates charged to the Cities, according to the component of the wastewater system which incurs the cost.

Figure 5.1: Cost Allocations

Treatment System Component	% Applied to Each
Billing Rate/ Flow	87.88%
Billing Rate/ Flow	6.89%
Billing Rate/ Flow	5.24%
Total System Users	

WASTEWATER COST FUNCTIONALIZATION

The Cost of Service Analysis is intended to functionalize, classify and allocate the costs identified in the revenue requirement analysis to the wastewater users that are directly responsible for the costs. For the purposes of this study, the costs will be broken down into expenses related to handling the flows into the treatment facility, and the expense of handling the strengths produced, specifically by TSS and BOD.

Figure 5.2: Wastewater Cost Functionalization

	2009	2010	2011	2012	2013
Flow	$ 7,206,742	$ 9,236,861	$ 10,465,525	$ 10,790,541	$ 11,253,277
SS	1,139,640	1,460,674	1,654,969	1,706,366	1,779,541
BOD	848,956	1,088,104	1,232,841	1,271,128	1,325,639
	$ 9,195,338	$ 11,785,639	$ 13,353,335	$ 13,768,035	$ 14,358,457

OPERATIONS & MAINTENANCE; DEBT SERVICE AND CAPITAL REPAIR & REPLACEMENT REQUIREMENTS

In order to accurately construct a user rate model sufficient to cover all aspects related to the wastewater collection and treatment system, LYRB relied upon a detailed review of the current operating budget, which includes: operations & maintenance forecasts, debt service assumptions (as presented in Chapter 4), and capital repair and replacement needs associated with the District's infrastructure.

Provided below in Figure 5.3 is a summary of the operational, debt service and capital repair and replacement needs of the District over the next four to five year period.

Figure 5.3: Summary of Operational, Maintenance, Debt Service and Capital Repair & Replacement Requirements

OPERATING EXPENSES	2009	2010	2011	2012	2013	2014	2015
New Plant Operations Expense	-	-	(817,741)	(850,451)	(884,469)	(919,848)	(956,642)
Administration	(3,523,773)	(3,647,105)	(3,774,754)	(3,906,870)	(4,043,611)	(4,185,137)	(4,331,617)
Operations	(1,112,000)	(1,150,920)	(1,191,202)	(1,232,894)	(1,276,046)	(1,320,707)	(1,366,932)
Maintenance	(337,400)	(349,209)	(361,431)	(374,081)	(387,174)	(400,725)	(414,751)
Collections	(88,200)	(91,287)	(94,482)	(97,789)	(101,212)	(104,754)	(108,420)
PreTreatment	(23,500)	(24,323)	(25,174)	(26,055)	(26,967)	(27,911)	(28,888)
Solids Handling	(307,250)	(318,004)	(329,134)	(340,654)	(352,576)	(364,917)	(377,689)
Electrical/Instrumentation	(180,450)	(186,766)	(193,303)	(200,068)	(207,071)	(214,318)	(221,819)
Fleet	(374,100)	(387,194)	(400,745)	(414,771)	(429,288)	(444,313)	(459,864)
Laboratory	(50,750)	(52,526)	(54,365)	(56,267)	(58,237)	(60,275)	(62,385)
Depreciation and Amortization (Capital Repair & Replacement)	(2,188,495)	(3,044,199)	(3,393,647)	(3,423,505)	(3,399,306)	(3,375,517)	(3,352,134)
Total Debt Service	(2,869,490)	(6,931,970)	(6,940,510)	(6,958,010)	(6,941,790)	(6,947,990)	(6,953,435)
Total O&M and DS Expenses	(11,055,408)	(16,183,502)	(17,576,488)	(17,881,417)	(18,107,746)	(18,366,413)	(18,634,575)

CHAPTER 6
PROPOSED WASTEWATER RATE STRUCTURE

As mentioned earlier, this wastewater rate structure is different than most, as it is a wholesale structure rather than a structure allocating costs to specific customer classes. The assessment of rates to customer classes will be handled at the City level to ensure that the amount paid to the District is recovered from the individual users.

RECOMMENDED RATES

The revenue requirement and cost of service analyses have shown that the District's current rate structure is sufficient to cover annual O&M expenses, debt expenses and coverage ratio requirements per the District's bond covenants, non-operating expenses, and all other expenses the District anticipates incurring over the horizon of this analysis. This rate structure is summarized below.

Figure 6.1: Recommended Rates

Cost Allocation Category	Units	Fee Per Unit			
		2009	2010	2011	2012
Flow	per 1,000 gallons	$ 1.544	$ 1.960	$ 1.960	$ 1.960
BOD	per 1 lb.	0.121	0.154	0.154	0.154
TSS	per 1 lb.	0.092	0.117	0.117	0.117

SECTION V: TECHNICAL APPENDICES

APPENDIX A: PROJECTIONS OF SANITARY SEWER DEMAND

SANITARY SEWER DEMAND

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	**Total Annual Sewer Flow (Per 1K gal Units)**													
2		**Ave Annual**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
3	Eagle Mountain	55	113,054	125,444	163,215	186,362	188,767	191,171	193,576	199,588	208,147	216,706	225,265	233,824
4	Alpine	88	194,521	200,031	200,055	209,452	212,154	214,857	217,560	224,316	233,936	243,555	253,175	262,794
5	Cedar Hills	78	143,259	157,589	168,391	173,831	176,074	178,317	180,560	186,167	194,151	202,134	210,118	218,101
6	Highland	97	262,419	265,845	274,551	344,029	348,468	352,907	357,346	368,444	384,244	400,044	415,844	431,644
7	Lehi	125	1,188,444	1,295,526	1,430,779	1,598,477	1,619,103	1,639,728	1,660,354	1,711,918	1,785,331	1,858,744	1,932,157	2,005,570
8	Pleasant Grove	146	899,800	920,328	866,525	931,272	943,288	955,304	967,321	997,362	1,040,132	1,082,903	1,125,673	1,168,443
9	Saratoga Springs	72	156,539	189,648	355,595	516,546	523,211	529,876	536,541	553,204	576,928	600,651	624,374	648,098
10	American Fork	171	1,167,960	1,261,731	1,164,371	1,159,037	1,173,992	1,188,947	1,203,903	1,241,291	1,294,522	1,347,753	1,400,984	1,454,215
11	Suncrest	26	2,495	4,844	14,235	20,916	21,186	21,456	21,726	22,400	23,361	24,322	25,282	26,243
12	**Total Sewer Demands (gal)**		**4,128,491**	**4,420,986**	**4,637,717**	**5,139,921**	**5,206,243**	**5,272,564**	**5,338,886**	**5,504,690**	**5,740,750**	**5,976,811**	**6,212,872**	**6,448,932**
13	**Total Sewer Demands (MGD)**		**11.31**	**12.11**	**12.71**	**14.08**	**14.26**	**14.45**	**14.63**	**15.08**	**15.73**	**16.37**	**17.02**	**17.67**
14	**% of Total Demand to City**		**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
15	**% of Total Demand to PG**		**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**
31	**Suspended Solids**													
32		**Ave Annual**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
33	Eagle Mountain	0	269,152	278,340	365,275	424,648	430,127	435,607	441,086	454,784	474,287	493,790	513,293	532,795
34	Alpine	0	388,637	406,335	372,773	429,379	434,919	440,460	446,000	459,851	479,571	499,291	519,011	538,731
35	Cedar Hills	0	236,935	272,246	278,125	323,016	327,184	331,352	335,520	345,940	360,775	375,610	390,445	405,280
36	Highland	1	526,875	568,933	546,826	772,589	782,558	792,527	802,496	827,418	862,901	898,383	933,866	969,348
37	Lehi	1	2,159,062	2,357,326	2,278,876	3,183,786	3,224,867	3,265,948	3,307,029	3,409,732	3,555,954	3,702,175	3,848,396	3,994,618
38	Pleasant Grove	1	1,459,781	1,721,214	1,504,009	1,811,335	1,834,707	1,858,079	1,881,451	1,939,881	2,023,070	2,106,259	2,189,448	2,272,637
39	Saratoga Springs	0	319,746	402,313	795,592	1,058,582	1,072,241	1,085,900	1,099,559	1,133,707	1,182,325	1,230,942	1,279,559	1,328,177
40	American Fork	1	1,657,107	1,769,045	1,669,671	2,321,658	2,351,615	2,381,572	2,411,529	2,486,421	2,593,047	2,699,674	2,806,300	2,912,927
41	Suncrest	0	3,703	7,964	28,365	46,714	47,317	47,920	48,522	50,029	52,175	54,320	56,465	58,611
42	**Total Sewer Demands (gal)**		**7,020,998**	**7,783,717**	**7,839,512**	**10,371,707**	**10,505,535**	**10,639,364**	**10,773,192**	**11,107,764**	**11,584,104**	**12,060,444**	**12,536,784**	**13,013,125**
43	**Total Sewer Demands (MGD)**		**19.24**	**21.33**	**21.48**	**28.42**	**28.78**	**29.15**	**29.52**	**30.43**	**31.74**	**33.04**	**34.35**	**35.65**
44	**% of Total Demand to City**		**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
45	**% of Total Demand to PG**		**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**
46	**Total BioOxygen Demand**													
47			**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
48	Eagle Mountain	1	253,463	253,753	350,792	446,523	452,285	458,046	463,808	478,212	498,719	519,227	539,734	560,241
49	Alpine	1	399,667	394,675	408,368	455,288	461,163	467,037	472,912	487,599	508,509	529,419	550,329	571,239
50	Cedar Hills	1	289,538	302,915	315,827	374,902	379,739	384,577	389,414	401,508	418,726	435,944	453,162	470,380
51	Highland	1	515,976	530,695	513,852	759,357	769,155	778,953	788,751	813,247	848,122	882,997	917,872	952,746
52	Lehi	1	2,270,298	2,213,076	2,269,961	3,173,867	3,214,820	3,255,773	3,296,726	3,399,109	3,544,875	3,690,641	3,836,407	3,982,173
53	Pleasant Grove	1	1,321,906	1,303,705	1,352,486	1,639,947	1,661,108	1,682,268	1,703,429	1,756,330	1,831,648	1,906,966	1,982,283	2,057,601
54	Saratoga Springs	1	301,187	346,753	648,041	1,051,671	1,065,241	1,078,811	1,092,381	1,126,306	1,174,606	1,222,906	1,271,206	1,319,506
55	American Fork	1	1,669,755	1,675,066	1,719,713	2,209,036	2,237,540	2,266,043	2,294,547	2,365,806	2,467,260	2,568,715	2,670,169	2,771,623
56	Suncrest	0	3,908	8,795	28,972	49,928	50,572	51,216	51,861	53,471	55,764	58,057	60,350	62,643
57	**Total Peak Month**		**1,458,644**	**1,482,038**	**1,588,839**	**2,036,070**	**2,062,342**	**2,088,614**	**2,114,886**	**2,180,565**	**2,274,076**	**2,367,586**	**2,461,096**	**2,554,607**
58	**% of Total Demand to City**		**88%**	**84%**	**112%**	**120%**	**120%**	**120%**	**120%**	**120%**	**120%**	**120%**	**120%**	**120%**
59	**% of Total Demand to PG**		**12%**	**16%**	**-12%**	**-20%**	**-20%**	**-20%**	**-20%**	**-20%**	**-20%**	**-20%**	**-20%**	**-20%**
60	A	B	C	D	E	F	G	H	I	J	K	L	M	N

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
65	A	B	C	D	E	F	G	H	I	J	K	L	M	N

SANITARY SEWER CONNECTIONS/ERUs

68	**Total Sewer Connections/ERUs**													
69			**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
70	Eagle Mountain	1%	2,562	3,159	3,573	3,637	3,684	3,731	3,778	3,895	4,062	4,229	4,396	4,563
71	Alpine	1%	3,414	3,467	3,563	3,580	3,626	3,672	3,718	3,834	3,998	4,163	4,327	4,492
72	Cedar Hills	1%	2,156	2,279	2,344	2,373	2,403	2,434	2,465	2,541	2,650	2,759	2,868	2,977
73	Highland	1%	2,716	3,034	3,128	3,155	3,196	3,236	3,277	3,379	3,524	3,669	3,814	3,958
74	Lehi	1%	11,187	12,787	13,394	13,652	13,829	14,005	14,181	14,621	15,248	15,875	16,502	17,129
75	Pleasant Grove	1%	8,364	8,879	9,132	9,244	9,364	9,483	9,602	9,900	10,325	10,750	11,174	11,599
76	Saratoga Springs	1%	3,612	4,377	4,695	4,904	4,967	5,030	5,094	5,252	5,477	5,702	5,927	6,153
77	American Fork	1%	7,888	8,337	9,462	8,561	8,671	8,782	8,892	9,169	9,562	9,955	10,348	10,741
78	Suncrest	1%	172	267	361	365	369	374	379	390	407	424	441	457
79	**Total Connections**		**42,072**	**46,586**	**49,652**	**49,471**	**50,109**	**50,748**	**51,386**	**52,982**	**55,254**	**57,526**	**59,798**	**62,070**

APPENDIX B: COVERAGE TABLE

				Percent Rate Increase		26%	27%	0%	0%	0%	0%	0%	0%	0%	
				Percent Revenue Increase		14%	28%	13%	3%	4%	4%	4%	4%	4%	
				Percent Connection Increase		1%	1%	1%	3%	4%	4%	4%	4%	4%	
WASTEWATER ENTERPRISE DEBT SERVICE COVERAGE				Total ERUs	38,750	39,250	39,750	40,250	41,500	43,280	45,059	46,839	48,619	50,398	
Years Ending December 31				New ERUs		500	500	500	1,250	1,780	1,780	1,780	1,780	1,780	
Scenario 4				Beg ERUs		38,750	39,250	39,750	40,250	41,500	43,280	45,059	46,839	48,619	
	HISTORICAL					**BUDGET**	**PRO FORMA**								
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	
OPERATING REVENUES															
Wastewater Treatment Income	$ 5,265,492	$ 6,130,639	$ 6,622,978	$ 7,132,433	$ 8,033,805	$ 9,195,338	$ 11,785,639	$ 13,353,335	$ 13,768,035	$ 14,358,457	$ 14,948,879	$ 15,539,301	$ 16,129,723	$ 16,720,146	
Micron RDA Revenues	-	-	-	-	313,861	54,875	-	-	-	-	-	-	-	-	
Compost Sales and Green Waste Fees	275,763	335,393	467,375	363,375	396,146	380,000	391,400	403,142	415,236	427,693	440,524	453,740	467,352	481,373	
Other Operating Revenue	17,424	14,456	17,482	13,802	10,368	9,500	9,500	9,500	9,500	9,500	9,500	9,500	9,500	9,500	
Total Operating Revenues	**$ 5,558,679**	**$ 6,480,488**	**$ 7,107,835**	**$ 7,509,610**	**$ 8,754,180**	**$ 9,639,713**	**$ 12,186,539**	**$ 13,765,977**	**$ 14,192,771**	**$ 14,795,650**	**$ 15,398,903**	**$ 16,002,541**	**$ 16,606,576**	**$ 17,211,018**	
OPERATING EXPENSES[2]															
Salaries and Benefits	$ (1,654,360)	$ (1,865,569)	$ (2,061,863)	$ (2,329,585)	$ (2,549,822)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
Compost Expense	(233,763)	(223,855)	(283,810)	(186,504)	(239,395)	-	-	-	-	-	-	-	-	-	
Utilities	(635,224)	(622,269)	(608,640)	(878,504)	(934,157)	-	-	-	-	-	-	-	-	-	
Repairs & maintenance	(352,846)	(579,522)	(487,166)	(394,608)	(719,248)	-	-	-	-	-	-	-	-	-	
Material/Supplies	(148,694)	(219,008)	(248,786)	(250,541)	(446,710)	-	-	-	-	-	-	-	-	-	
Other Expenses	(304,005)	(313,424)	(261,166)	(277,623)	(283,939)	-	-	-	-	-	-	-	-	-	
Bad Debt	-	-	-	(12,000)	-	-	-	-	-	-	-	-	-	-	
New Plant Operations Expense	-	-	-	-	-	-	-	(817,741)	(850,451)	(884,469)	(919,848)	(956,642)	(994,907)	(1,034,704)	
Administration	-	-	-	-	-	(3,523,773)	(3,647,105)	(3,774,754)	(3,906,870)	(4,043,611)	(4,185,137)	(4,331,617)	(4,483,224)	(4,640,136)	
Operations	-	-	-	-	-	(1,112,000)	(1,150,920)	(1,191,202)	(1,232,894)	(1,276,046)	(1,320,707)	(1,366,932)	(1,414,775)	(1,464,292)	
Maintenance	-	-	-	-	-	(337,400)	(349,209)	(361,431)	(374,081)	(387,174)	(400,725)	(414,751)	(429,267)	(444,291)	
Collections	-	-	-	-	-	(88,200)	(91,287)	(94,482)	(97,789)	(101,212)	(104,754)	(108,420)	(112,215)	(116,143)	
PreTreatment	-	-	-	-	-	(23,500)	(24,323)	(25,174)	(26,055)	(26,967)	(27,911)	(28,888)	(29,899)	(30,945)	
Solids Handling	-	-	-	-	-	(307,250)	(318,004)	(329,134)	(340,654)	(352,576)	(364,917)	(377,689)	(390,908)	(404,590)	
Electrical/Instrumentation	-	-	-	-	-	(180,450)	(186,766)	(193,303)	(200,068)	(207,071)	(214,318)	(221,819)	(229,583)	(237,618)	
Fleet	-	-	-	-	-	(374,100)	(387,194)	(400,745)	(414,771)	(429,288)	(444,313)	(459,864)	(475,960)	(492,618)	
Laboratory	-	-	-	-	-	(50,750)	(52,526)	(54,365)	(56,267)	(58,237)	(60,275)	(62,385)	(64,568)	(66,828)	
Depreciation and Amortization	(1,576,202)	(1,481,191)	(1,562,587)	(1,544,177)	(1,708,412)	(2,188,495)	(3,044,199)	(3,393,647)	(3,423,505)	(3,399,306)	(3,375,517)	(3,352,134)	(3,329,147)	(3,306,552)	
Total Operating Expenses	$ (4,905,094)	$ (5,304,838)	$ (5,514,018)	$ (5,873,542)	$ (6,881,684)	$ (8,185,918)	$ (9,251,532)	$ (10,635,978)	$ (10,923,407)	$ (11,165,956)	$ (11,418,423)	$ (11,681,140)	$ (11,954,452)	$ (12,238,717)	
Net Operating Income	**$ 653,585**	**$ 1,175,650**	**$ 1,593,817**	**$ 1,636,068**	**$ 1,872,496**	**$ 1,453,795**	**$ 2,935,007**	**$ 3,129,999**	**$ 3,269,365**	**$ 3,629,695**	**$ 3,980,481**	**$ 4,321,401**	**$ 4,652,124**	**$ 4,972,302**	
NON-OPERATING REVENUES (EXPENSES)															
Interest Income[3]	$ 633,182	$ 1,163,250	$ 2,337,113	$ 2,804,647	$ 2,107,225	$ 844,350	$ 1,697,623	$ 875,275	$ 344,461	$ 337,006	$ 467,481	$ 609,237	$ 762,340	$ 932,340	
Loss on Early Extinguishment of Bonds	-	-	-	(1,855,054)	-	-	-	-	-	-	-	-	-	-	
Loss on Disposal of Fixed Assets	-	(1,200)	-	-	-	-	-	-	-	-	-	-	-	-	
Impact Fees[4]	8,322,648	10,057,652	11,538,276	8,855,409	2,824,826	1,909,000	1,909,000	1,909,000	4,772,500	6,794,769	6,794,769	6,794,769	6,794,769	6,794,769	
Add back Depreciation	1,576,202	1,481,191	1,562,587	1,544,177	1,708,412	2,188,495	3,044,199	3,393,647	3,423,505	3,399,306	3,375,517	3,352,134	3,329,147	3,306,552	
Total Non-operating Revenues (Expenses)	10,532,032	12,700,893	15,437,976	11,349,179	6,640,464	4,941,845	6,650,822	6,177,922	8,540,466	10,531,081	10,637,767	10,756,140	10,886,256	11,033,661	
TOTAL REVENUES AVAILABLE FOR DS:	**$ 11,185,617**	**$ 13,876,543**	**$ 17,031,793**	**$ 12,985,247**	**$ 8,512,960**	**$ 6,395,640**	**$ 9,585,829**	**$ 9,307,921**	**$ 11,809,830**	**$ 14,160,775**	**$ 14,618,248**	**$ 15,077,541**	**$ 15,538,380**	**$ 16,005,963**	
WATER INDEBTEDNESS:															
Series 1994 State Loan 4.00%					-										
Total P&I:	$ (213,120)	$ (213,800)	$ (213,240)	$ (213,480)	$ (213,480)	$ (223,240)	$ (213,760)	$ (213,000)	$ (214,000)	$ (213,680)	$ (213,080)	$ (213,200)	$ -	$ -	
Series 1996a Revenue Bonds (Unref. Portion)															
Total P&I:	(908,686)	(1,395,771)	(1,478,520)	-	-	-	-	-	-	-	-	-	-	-	
Series 1998 (UFWA)															
Total P&I:	(1,912,143)	(1,914,798)	(1,911,991)	-	-	-	-	-	-	-	-	-	-	-	
Series 2007A (Fixed-Rate)															
Total P&I:	-	-	-	(953,539)	(2,644,300)	(2,646,250)	(2,629,350)	(2,638,650)	(2,655,150)	(2,639,250)	(2,646,050)	(2,651,375)	(2,649,500)	(2,653,125)	
Series 2007B (VRDN's)															
Total P&I:	-	-	-	(65,890)	(384,872)	-	-	-	-	-	-	-	-	-	
Series 2009 Sewer Revenue Bonds[5]	-	-	-												
Total P&I:							(4,088,860)	(4,088,860)	(4,088,860)	(4,088,860)	(4,088,860)	(4,088,860)	(4,088,860)	(4,088,860)	
TOTAL DEBT SERVICE:	**$ (3,033,949)**	**$ (3,524,369)**	**$ (3,603,751)**	**$ (1,232,909)**	**$ (3,242,652)**	**$ (2,869,490)**	**$ (6,931,970)**	**$ (6,940,510)**	**$ (6,958,010)**	**$ (6,941,790)**	**$ (6,947,990)**	**$ (6,953,435)**	**$ (6,738,360)**	**$ (6,741,985)**	
DS Coverage	**3.69**	**3.94**	**4.73**	**10.53**	**2.63**	**2.23**	**1.38**	**1.34**	**1.70**	**2.04**	**2.10**	**2.17**	**2.31**	**2.37**	
Remaining Revenues for CIP	$ 8,151,668	$ 10,352,174	$ 13,428,042	$ 11,752,338	$ 5,270,308	$ 3,526,150	$ 2,653,859	$ 2,367,411	$ 4,851,820	$ 7,218,985	$ 7,670,258	$ 8,124,106	$ 8,800,020	$ 9,263,978	
Bond Proceeds				31,877,496		55,500,000									
CAPITAL IMPROVEMENT PROGRAM															
Repair and Replacement[1]	-	-	-	-	-	(2,000,000)	(2,000,000)	(2,000,000)	(2,000,000)	(2,000,000)	(2,000,000)	(2,000,000)	(2,000,000)	(2,000,000)	
TREATMENT															
WWTP Expansion	-	-	-	-	(2,728,000)	(11,130,000)	(43,912,000)	(21,600,000)	(3,150,000)	-	-	-	-	-	
COLLECTION	-	-	-	-							-	-	-	-	
Lehi Outfall Line Repair	-	-	-	-	-	(3,280,000)	-	-	-	-	-	-	-	-	
Boat Harbor Lift Sta Replacement	-	-	-	-	(335,000)	(5,320,000)	-	-	-	-	-	-	-	-	
Alpine/Highland Line Segment 2	-	-	-	-	-	(5,370,000)	-	-	-	-	-	-	-	-	
Alpine/Highland Line Segment 3A&B	-	-	-	-	-		(6,612,000)	-	-	-	-	-	-	-	
Pleasant Grove/Cedar Hills Outfall	-	-	-	-	-	(467,000)	-	-	-	-	-	-	-	-	
Pleasant Grove/Cedar Hills Outfall	-	-	-	-	-	(500,000)	-	-	-	-	-	-	-	-	
Suncrest Lift Station Upgrade	-	-	-	-	-	(368,000)	-	-	-	-	-	-	-	-	
Land Acquisition for Composting	-	-	-	-	-	(2,000,000)	-	-	-	-	-	-	-	-	
Totals:					**$ (3,063,000)**	**$ (30,435,000)**	**$ (52,524,000)**	**$ (23,600,000)**	**$ (5,150,000)**	**$ (2,000,000)**	**$ (2,000,000)**	**$ (2,000,000)**	**$ (2,000,000)**	**$ (2,000,000)**	
Beginning Yr. Cash Balance						$ 56,290,000	$ 84,881,150	$ 35,011,009	$ 13,778,420	$ 13,480,240	$ 18,699,226	$ 24,369,483	$ 30,493,590	$ 37,293,609	
Ending Yr. Cash Balance					$ 56,290,000	$ 84,881,150	$ 35,011,009	$ 13,778,420	$ 13,480,240	$ 18,699,226	$ 24,369,483	$ 30,493,590	$ 37,293,609	$ 44,557,587	
Coverage Without Impact Fees				3.35	1.75	1.56	1.11	1.07	1.01	1.06	1.13	1.19	1.30	1.37	

Footnotes

1 -- Projected rates will be effective on July 1 of each year

2-- Operating Expenses Increased at 3.5% annually

3 -- Interest income based on previous year ending fund balance invested at 1.5% in 2009,
2% in 2010 and at 2.5% thereforward.

4 -- Impact fee is projected to be assessed at approximately $3,818 per ERU which is
100% of the allowable impact fee

5 -- Series 2009 Bond Assumptions - $57M Par Amount, 25 yrs, TIC 5.13%

APPENDIX C: COMPARATIVE ANNUAL PAYMENTS

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Eagle Mountain	% Change	1.09%	1.31%	1.16%	1.14%	1.28%	1.13%	1.03%	1.04%	1.04%	1.04%
Flow	$ 138,491	$ 153,668	$ 199,939	$ 228,294	$ 261,300	$ 334,908	$ 379,457	$ 391,241	$ 408,019	$ 424,797	$ 441,574
SS	25,839	26,721	35,066	40,766	46,660	59,804	67,759	69,864	72,860	75,856	78,852
BOD	18,503	18,524	25,608	32,596	37,309	47,819	54,180	55,862	58,258	60,653	63,049
	$ 182,832	$ 198,913	$ 260,613	$ 301,656	$ 345,270	$ 442,531	$ 501,395	$ 516,967	$ 539,136	$ 561,305	$ 583,475
Alpine	% Change	1.03%	0.99%	1.07%	1.14%	1.28%	1.13%	1.03%	1.04%	1.04%	1.04%
Flow	$ 238,288	$ 245,038	$ 245,067	$ 256,578	293,675	376,402	426,470	439,715	458,571	477,428	496,284
SS	37,309	39,008	35,786	41,220	47,180	60,471	68,514	70,642	73,671	76,701	79,730
BOD	29,176	28,811	29,811	33,236	38,041	48,757	55,243	56,959	59,401	61,844	64,286
	$ 304,773	$ 312,858	$ 310,664	$ 331,035	$ 378,896	$ 485,630	$ 550,227	$ 567,315	$ 591,644	$ 615,972	$ 640,301
Cedar Hills	% Change	1.10%	1.06%	1.06%	1.14%	1.28%	1.13%	1.03%	1.04%	1.04%	1.04%
Flow	$ 175,492	$ 193,047	$ 206,279	$ 212,943	$ 243,730	$ 312,388	$ 353,941	$ 364,933	$ 380,583	$ 396,233	$ 411,882
SS	22,746	26,136	26,700	31,010	35,493	45,491	51,542	53,143	55,422	57,701	59,980
BOD	21,136	22,113	23,055	27,368	31,325	40,149	45,489	46,902	48,913	50,925	52,936
	$ 219,374	$ 241,295	$ 256,034	$ 271,320	$ 310,548	$ 398,028	$ 450,973	$ 464,978	$ 484,918	$ 504,858	$ 524,798
Highland	% Change	1.02%	1.02%	1.29%	1.14%	1.28%	1.13%	1.03%	1.04%	1.04%	1.04%
Flow	$ 321,464	$ 325,660	$ 336,326	$ 421,435	$ 482,367	$ 618,248	$ 700,486	$ 722,240	$ 753,212	$ 784,185	$ 815,157
SS	50,580	54,618	52,495	74,169	84,892	108,806	123,279	127,107	132,558	138,009	143,460
BOD	37,666	38,741	37,511	55,433	63,448	81,321	92,138	94,999	99,073	103,147	107,221
	$ 409,710	$ 419,019	$ 426,332	$ 551,037	$ 630,706	$ 808,374	$ 915,902	$ 944,346	$ 984,843	$ 1,025,340	$ 1,065,837
Lehi	% Change	1.08%	1.08%	1.17%	1.14%	1.28%	1.13%	1.03%	1.04%	1.04%	1.04%
Flow	$ 1,455,844	$ 1,587,019	$ 1,752,705	$ 1,958,135	$ 2,241,243	$ 2,872,595	$ 3,254,701	$ 3,355,778	$ 3,499,686	$ 3,643,594	$ 3,787,501
SS	207,270	226,303	218,772	305,643	349,834	448,381	508,023	523,800	546,263	568,725	591,188
BOD	165,732	161,555	165,707	231,692	265,191	339,894	385,106	397,066	414,093	431,121	448,148
	$ 1,828,846	$ 1,974,877	$ 2,137,184	$ 2,495,471	$ 2,856,267	$ 3,660,870	$ 4,147,830	$ 4,276,644	$ 4,460,042	$ 4,643,440	$ 4,826,837
Pleasant Grove	% Change	1.04%	0.94%	1.10%	1.14%	1.28%	1.13%	1.03%	1.04%	1.04%	1.04%
Flow	$ 1,102,255	$ 1,127,402	$ 1,061,493	$ 1,140,808	$ 1,305,746	$ 1,673,571	$ 1,896,186	$ 1,955,073	$ 2,038,914	$ 2,122,754	$ 2,206,595
SS	140,139	165,237	144,385	173,888	199,029	255,095	289,027	298,003	310,782	323,562	336,341
BOD	96,499	95,170	98,732	119,716	137,025	175,624	198,985	205,165	213,963	222,761	231,560
	$ 1,338,893	$ 1,387,809	$ 1,304,609	$ 1,434,412	$ 1,641,800	$ 2,104,291	$ 2,384,198	$ 2,458,241	$ 2,563,660	$ 2,669,078	$ 2,774,496
Saratoga Springs	% Change	1.21%	1.89%	1.45%	1.14%	1.28%	1.13%	1.03%	1.04%	1.04%	1.04%
Flow	$ 191,761	$ 232,318	$ 435,604	$ 632,769	$ 724,255	$ 928,276	$ 1,051,753	$ 1,084,416	$ 1,130,919	$ 1,177,423	$ 1,223,927
SS	30,696	38,622	76,377	101,624	116,317	149,083	168,913	174,159	181,628	189,096	196,565
BOD	21,987	25,313	47,307	76,772	87,872	112,625	127,606	131,569	137,211	142,853	148,495
	$ 244,443	$ 296,253	$ 559,288	$ 811,165	$ 928,444	$ 1,189,983	$ 1,348,272	$ 1,390,144	$ 1,449,758	$ 1,509,372	$ 1,568,987
American Fork	% Change	1.07%	0.93%	1.05%	1.14%	1.28%	1.13%	1.03%	1.04%	1.04%	1.04%
Flow	$ 1,430,750	$ 1,545,621	$ 1,426,354	$ 1,419,820	$ 1,625,098	$ 2,082,884	$ 2,359,944	$ 2,433,234	$ 2,537,580	$ 2,641,925	$ 2,746,271
SS	159,082	169,828	160,288	222,879	255,103	326,965	370,457	381,962	398,342	414,722	431,102
BOD	121,892	122,280	125,539	161,260	184,575	236,569	268,037	276,361	288,212	300,063	311,915
	$ 1,711,725	$ 1,837,729	$ 1,712,181	$ 1,803,959	$ 2,064,776	$ 2,646,418	$ 2,998,438	$ 3,091,557	$ 3,224,134	$ 3,356,711	$ 3,489,287
Suncrest	% Change	1.99%	3.03%	1.52%	1.14%	1.28%	1.13%	1.03%	1.04%	1.04%	1.04%
Flow	$ 3,056	$ 5,934	$ 17,438	$ 25,622	$ 29,327	$ 37,588	$ 42,588	$ 43,910	$ 45,793	$ 47,676	$ 49,559
SS	355	765	2,723	4,485	5,133	6,579	7,454	7,685	8,015	8,345	8,674
BOD	285	642	2,115	3,645	4,172	5,347	6,058	6,246	6,514	6,782	7,050
	$ 3,697	$ 7,340	$ 22,276	$ 33,751	$ 38,631	$ 49,513	$ 56,100	$ 57,842	$ 60,322	$ 62,803	$ 65,283
Revenues	**$ 6,244,293**	**$ 6,676,094**	**$ 6,989,181**	**$ 8,033,805**	**$ 9,195,338**	**$ 11,785,639**	**$ 13,353,335**	**$ 13,768,035**	**$ 14,358,457**	**$ 14,948,879**	**$ 15,539,301**