

<p>Town of Exeter, New Hampshire February 2011 Proposed Groundwater System Projected Capital Cost Estimate</p>

Project Estimates	2011	Bonding Effect	Notes
Stadium Well Equipment		\$310,500	
Gilman Well Equipment		\$235,750	
Lary Lane Well Equipment		\$228,600	\$774,850
Transmission and Distribution Main Upgrades		\$1,092,750	
Groundwater Treatment Facility		\$4,482,400	
Water Efficiency Program		\$0	\$100,000 anticipated at end of project if contingency funds are not fully utilized
Total	\$0	\$6,350,000	

Anticipated Rate Effect (30% Forgiveness of \$3,400,000 DES SRF Funding)			
Total Project Capital Cost	\$0	\$6,350,000	
Town Bond Portion (%)		0%	This percentage can change based on Town input
Town Bond Portion (\$)		\$0	
SRF Funding Forgiveness		\$1,020,000	30% forgiveness on \$3,400,000 loan (per DES)
20 Year Bond at 2.86%		\$5,330,000	
Bonding Cost per year (20 year term)		\$350,255	2.86% interest rate
Average Tier 1 Annual Water Bill	\$375.15	\$432.34	Based on 2011 rates
Annual Rate Effect per Tier 1 Customer		\$57.19	2964 Accounts
Quarterly Rate Effect per Tier 1 Customer		\$14.30	
Monthly Rate Effect per Tier 1 Customer		\$4.77	

Anticipated Rate Effect (30% Forgiveness of \$4,900,000 DES SRF Funding)			
Total Project Capital Cost	\$0	\$6,350,000	
Town Bond Portion (%)		0%	This percentage can change based on Town input
Town Bond Portion (\$)		\$0	
SRF Funding Forgiveness		\$1,470,000	30% forgiveness on \$4,900,000 loan (per DES)
20 Year Bond at 2.86%		\$4,880,000	
Bonding Cost per year (20 year term)		\$320,684	2.86% interest rate
Average Water Bill	\$375.15	\$427.51	Based on 2011 rates
Annual Rate Effect per Tier 1 Customer		\$52.36	2964 Accounts
Quarterly Rate Effect per Tier 1 Customer		\$13.09	
Monthly Rate Effect per Tier 1 Customer		\$4.36	

Notes:

* Costs updated on February 3, 2011 based on discussions with Town staff

Town of Exeter - Estimated Water Revenues Based on 2008 Water User Data and 2011 Rates

	Annual Revenue	Customers	% Revenue	Average	Estimated Annual Payment of \$4.85 Million Bond @ 2.86%	Estimated Annual Cost per Customer	Estimated Quarterly Increase Per Customer	Estimated Annual Bill	Estimated % Increase
All Users	\$2,297,674	3358			\$320,683.68				
Tier 1	\$1,111,955	2964	48.39%	\$375.15	\$155,194.31	\$52.36	\$13.09	\$427.51	14.0%
Tier 2	\$519,452	345	22.61%	\$1,505.66	\$72,499.30	\$210.14	\$52.54	\$1,715.80	14.0%
Tier 3	\$666,267	49	29.00%	\$13,597.28	\$92,990.07	\$1,897.76	\$474.44	\$15,495.04	14.0%

\$6.25 Million Bond

\$6.35 Million Bond

All Users	\$2,297,674	3358			\$417,283.00				
Tier 1	\$1,111,955	2964	48.39%	\$375.15	\$201,943.41	\$68.13	\$17.03	\$443.29	18.2%
Tier 2	\$519,452	345	22.61%	\$1,505.66	\$94,338.23	\$273.44	\$68.36	\$1,779.10	18.2%
Tier 3	\$666,267	49	29.00%	\$13,597.28	\$121,001.41	\$2,469.42	\$617.35	\$16,066.70	18.2%

\$10.0 Million Bond

\$10.0 Million Bond

All Users	\$2,297,674	3358			\$657,138.00				
Tier 1	\$1,111,955	2964	48.39%	\$375.15	\$318,020.83	\$107.29	\$26.82	\$482.45	28.6%
Tier 2	\$519,452	345	22.61%	\$1,505.66	\$148,564.01	\$430.62	\$107.66	\$1,936.28	28.6%
Tier 3	\$666,267	49	29.00%	\$13,597.28	\$190,553.23	\$3,888.84	\$972.21	\$17,486.12	28.6%

\$15.0 Million Bond

\$15.0 Million Bond

All Users	\$2,297,674	3358			\$985,708.00				
Tier 1	\$1,111,955	2964	48.39%	\$375.15	\$477,031.73	\$160.94	\$40.24	\$536.10	42.9%
Tier 2	\$519,452	345	22.61%	\$1,505.66	\$222,846.24	\$645.93	\$161.48	\$2,151.59	42.9%
Tier 3	\$666,267	49	29.00%	\$13,597.28	\$285,830.14	\$5,833.27	\$1,458.32	\$19,430.55	42.9%

Water use data taken from 2010 Water Supply Alternatives Study (Weston & Sampson)

Water revenue calculated based on 2011 Town of Exeter Water Rates:
 \$28/quarter base service fee (\$112/year)
 Tier 1 \$5.45 per 1,000 gallons of use - up to 29,999 gallons
 Tier 2 \$5.91 per 1,000 gallons of use - up to 194,999 gallons
 Tier 3 \$6.35 per 1,000 gallons of use - over 194,999 gallons

Exeter Groundwater System Well Cost Estimate Detail

	<u>Size</u>	<u>Cost</u>
Stadium Well		
pump/motor/VFD equipment	75 hp	\$ 175,000
8-inch piping	8-inch	\$ -
electrical and controls	LS	\$ 50,000
building and metering		\$ 45,000
Design (15%)		\$ 40,500
TOTAL		\$ 310,500

Gilman Well		
pump/motor/VFD equipment	40 hp	\$ 125,000
8-inch piping	8-inch	\$ -
electrical and controls	LS	\$ 40,000
building rehab		\$ 40,000
Design (15%)		\$ 30,750
TOTAL		\$ 235,750

Lary Lane		
pump/motor/VFD equipment	40 hp	\$ 123,783
8-inch piping	8-inch	\$ -
electrical and controls	LS	\$ 50,000
Building upgrades		\$ 25,000
Design (15%)		\$ 29,817
TOTAL		\$ 228,600

\$ 774,850 Total Wells
 \$ 1,092,750 Total Water Main
 \$ 1,867,600 Total Wells and Water Main
 Water Supply Alternatives Study had estimate of \$1.67 to \$2.0 million

Backup - Calcs

Wells depth - pumping 30 ft below grade
 System Pressure 90 psi
 Losses through Filter Plant 15 psi

		Horsepower (flow*TDH/3960/efficiency)	
		Assume combined motor/pump eff = .6	
		BHP	Use Motor Size
TDH - estimate	272.55 ft		
TDH conservative	300 ft		
Gilman flow	225 gpm	28.4090909	40 hp
Stadium flow	500 gpm	63.1313131	75 hp
Lary Lane flow	250 gpm	31.5656566	40 hp
1984 test well flow max	500 gpm	63.1313131	75 hp
1984 test well direct to system	500 gpm	54.7138047	60 hp

*add TDH to account for losses to WTP
 reduce TDH to 260 ft

Exeter Groundwater System Water Mains

Item	Description	Purpose	Cost (Includes Design)	
1	Well or service for Gilman Farm	Replace existing	\$ 25,000	More Contingency
2	Lary Lane to Bell Ave	Transmission	\$ 236,000	State Highway, plus wetlands issues
3	Bell Avenue to Gilman Park	Transmission	\$ 183,000	
4	Upgrade piping to connect Gilman/Stadium	Transmission	\$ 187,500	River Crossing
5	River Pump Station Disconnection		\$ 30,000	
6	Bell Avenue to Court Street	Distribution	\$ 87,750	
7	Alternative GW System Location	Lary Lane Site	\$ 125,000	If located at Lary Lane
8	Subtotal		\$ 874,250	
9	Construction Admin (10%)		0.10 \$ 87,362	
10	Contingency (15%)		0.15 \$ 131,138	Wetlands, river, highway issues

Total Cost Estimate

\$ 1,092,750

Exeter Groundwater System Water Treatment Facility

Option #1

1 - Treatment of Gilman, Stadium, and Lary Lane
Building - Assume 7.5 gpm/sf, then 4 8-ft filters with room for fifth

A - Greensand - no clearwell

	QTY	Unit	Unit Price	Price
Building for filters, elec, mech, chemical	2500	sf	\$200	\$409,000
Foundation (no tank, residuals to sewer)	150	cy	\$800	\$120,000
Filters with media, piping, valves, controls	4	ea	\$500,000	\$2,000,000
Electrical/Mechanical	1	ls	\$300,000	\$300,000
Site work/excavation	850	cy	\$40	\$34,000
Yard Piping	200	lf	\$150	\$30,000
Backwash - assume from dist system	0			

Total **\$2,893,000**

Plus Design Engineering (10%) \$289,300
 Plus Construction Administration (10%) \$289,300
 Plus Contingency (10%) \$289,300

Add Backwash tank - concrete

excavation	350	CY	\$800	\$280,000
backfill	2500	cy	\$15	\$37,500
Equipment, piping, controls	1500	cy	\$25	\$37,500
	1	LS	\$200,000	\$200,000

\$3,448,000

Plus Design Engineering (10%) \$344,800
 Plus Construction Administration (10%) \$344,800
 Plus Contingency (10%) \$344,800

TOTAL A - without residuals handling **\$3,760,900**

TOTAL A - with residuals handling **\$4,482,400**

B - Layne Ox or Pureflow (with clearwell/pumps)

Building for filters, elec, mech, chemical	2500	sf	\$200	\$409,000
Foundation (no tank, residuals to sewer)	225	cy	\$800	\$180,000
Filters with media, piping, valves, controls	4	ea	\$500,000	\$2,000,000
Electrical/Mechanical	1	ls	\$400,000	\$400,000
Site work/excavation	4500	cy	\$50	\$225,000
Yard Piping	200	lf	\$150	\$30,000
Backwash - assume to sewer	0			\$0
Clearwell	200	cy	\$800	\$160,000
Backwash pump/finished water pumps	1	ls	\$175,000	\$175,000

Total **\$3,244,000**

Plus Design Engineering (10%) \$324,400
 Plus Construction Administration (10%) \$324,400
 Plus Contingency (10%) \$324,400

Add Backwash tank - concrete

excavation	350	CY	\$800	\$280,000
backfill	2500	cy	\$15	\$37,500
Equipment, piping, controls	1500	cy	\$25	\$37,500
	1	LS	\$200,000	\$200,000

\$3,799,000

Plus Design Engineering (10%) \$379,900
 Plus Construction Administration (10%) \$379,900
 Plus Contingency (10%) \$379,900

TOTAL B without Residuals handling **\$4,217,200**

TOTAL B with Residuals settling **\$4,938,700**