

Plainville Town Council Work Session

Water Pollution Control Facility Upgrade Project

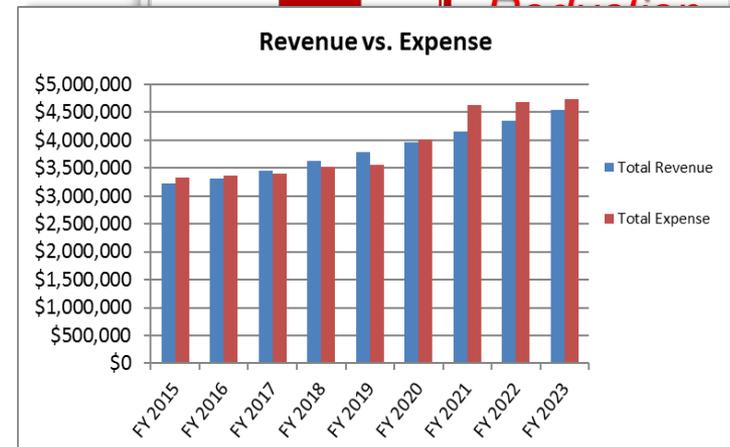
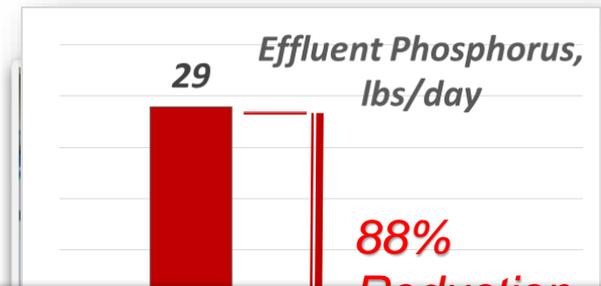
Presenter
Steve Seigal

July 17, 2017



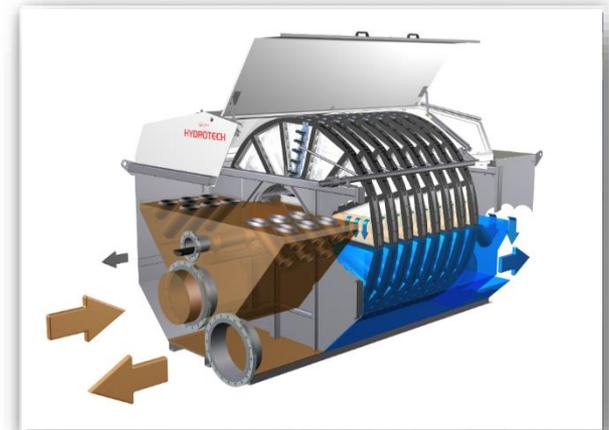
Key Project Goals

- Comply with new phosphorus limits
- Improve sludge processing system
- Confirm previous sewer rate projections



A Cost-Effective, Proven System for Phosphorus Removal

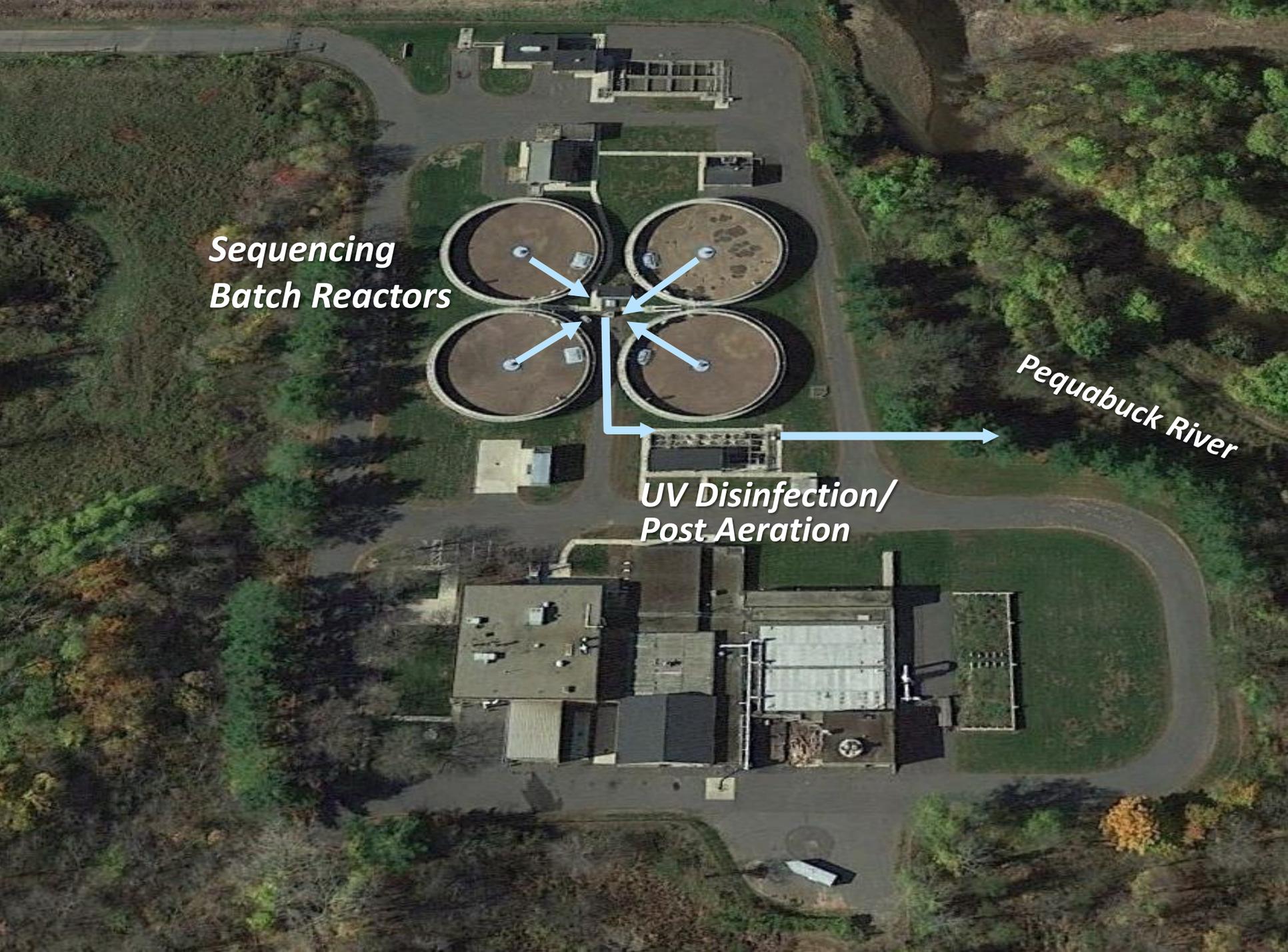
- Conducted bench scale testing
- Selected the best technology



*Sequencing
Batch Reactors*

*UV Disinfection/
Post Aeration*

Pequabuck River



CT DEEP Now Requires Measures to Reduce Flood Impacts



Effects of Tropical Storm Irene, August 2011

*Sequencing
Batch Reactors*



UV Disinfection



*Sequencing
Batch Reactors*

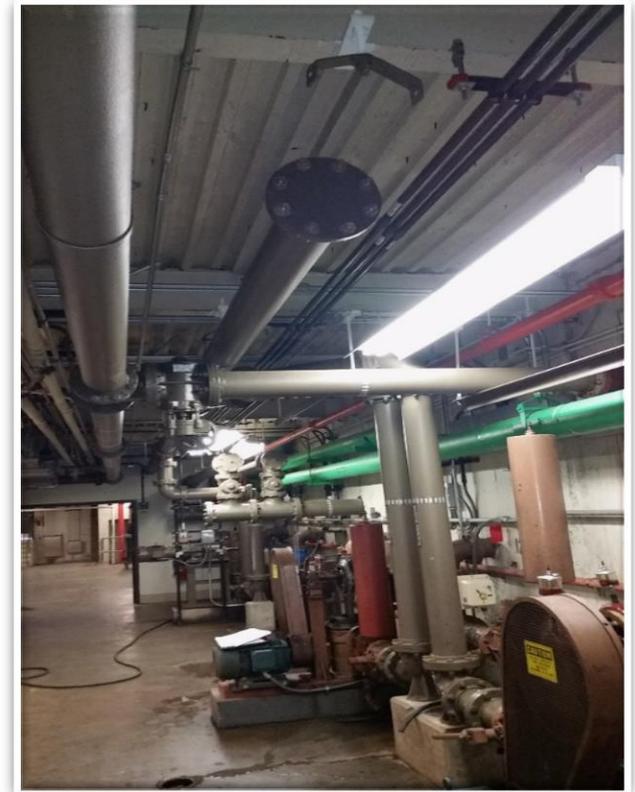


*Disc Filtration Building
& UV Disinfection*



Install New Sludge Processing System Improvements are Needed

- Existing conditions
 - Aging equipment
 - Low capacity
 - High O&M
 - 260' sludge piping





*Existing Sludge
Processing Equipment*

Sludge Storage Tanks

Former Lime Silo Room

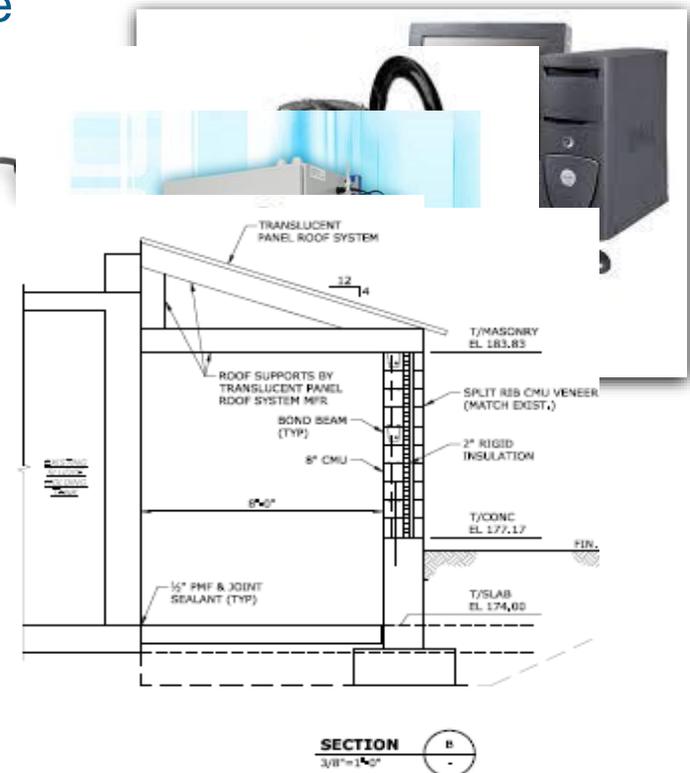
Install New Sludge Processing Equipment in Former Lime Silo Room

- Improvements provide:
 - Higher capacity
 - Improved efficiency and reliability
 - Less O&M costs



Additional Efficiency Enhancements

- Value added enhancements include:
 - Replace aging computers and software
 - Sludge valve actuators
 - SBR analyzers
 - Influent phosphorus analyzers
 - Filter influent jockey pump
 - Building and pipe chase corridor



Estimated Project Cost

May 2, 2016

30% Grant

50% Grant

Construction Cost	\$11,539,000	Construction Cost	\$11,539,000
Engineering Services	\$2,600,000	Engineering Services	\$2,600,000
Bonds and Interest	\$500,000	Bonds and Interest	\$500,000
Project Cost	\$14,639,000	Project Cost	\$14,639,000
Grant Funds	(\$4,242,000)	Grant Funds	(\$7,070,000)
Net Cost to Town After Grant	\$10,397,000	Net Cost to Town After Grant	\$7,569,000

Rate Study Projection

Sept. 22, 2014 Council Briefing

Town of Plainville Sewer Rate Study September 22, 2014

Tighe&Bond

	A	B	C	D	E	F	G	H	I	J	K	L
1	SCENARIO 3											
2	WORKSHEET 7											
3	Revenue and Expense Summary											
4												
5	Analysis Period	7/12 - 6/13 (Actual)	6/14 (Budgeted)	7/14 - 6/15	7/15 - 6/16	7/16 - 6/17	7/17 - 6/18	7/18 - 6/19	7/19 - 6/20	7/20 - 6/21	7/21 - 6/22	7/22 - 6/23
6	Fiscal Year	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
7												
8	Revenue											
9	User Charges	\$2,852,451	\$2,937,264	\$3,086,237	\$3,234,376	\$3,389,626	\$3,552,328	\$3,722,840	\$3,901,536	\$4,088,810	\$4,285,073	\$4,490,757
10	1.9% Allowance for Customer Non-Payment*											
11	*Budgeted revenue from user charges for FY2013 was \$2,906,613 or 1.9% more than actual user charge revenue											
12	User Charges Less Allowance for Non-Payment			\$3,027,598	\$3,172,923	\$3,325,223	\$3,484,834	\$3,652,106	\$3,827,407	\$4,011,123	\$4,203,657	\$4,405,432
13												
14	Other Revenue Sources	\$194,318	\$140,500	\$150,500	\$153,510	\$156,580	\$158,146	\$159,727	\$161,325	\$162,938	\$164,567	\$166,213
15												
16	Total Revenue	\$3,046,769	\$3,077,764	\$3,178,098	\$3,326,433	\$3,481,804	\$3,642,980	\$3,811,834	\$3,988,732	\$4,174,061	\$4,368,224	\$4,571,645
17												
18	Expenses											
19	Existing Operational Costs	\$1,465,452	\$1,519,853	\$1,533,021	\$1,563,681	\$1,594,955	\$1,642,804	\$1,692,088	\$1,742,850	\$1,795,136	\$1,848,990	\$1,904,460
20	Debt Service	\$1,422,764	\$1,420,815	\$1,418,540	\$1,415,939	\$1,413,341	\$1,429,064	\$1,408,790	\$1,917,552	\$1,914,953	\$1,912,353	\$1,909,753
21	Other Costs/Additional O&M	\$443,800	\$424,676	\$380,670	\$386,783	\$393,019	\$449,379	\$455,867	\$867,484	\$874,234	\$881,118	\$888,141
22	Total Expense	\$3,332,016	\$3,365,344	\$3,332,231	\$3,366,403	\$3,401,315	\$3,521,247	\$3,556,744	\$4,527,886	\$4,584,322	\$4,642,461	\$4,702,353
23												
24	Revenue - Expenses	-\$285,247	-\$287,580	-\$154,132	-\$39,970	\$80,489	\$121,733	\$255,089	-\$539,154	-\$410,262	-\$274,237	-\$130,708
25												
26	Fund balance	\$2,344,685	\$2,057,105	\$1,902,973	\$1,863,003	\$1,943,492	\$2,065,225	\$2,320,314	\$1,781,160	\$1,370,899	\$1,096,661	\$965,954
27	Is Fund Balance > 2 months operating expense?			Yes								
28	2 months total expense			\$555,372	\$561,067	\$566,886	\$586,874	\$592,791	\$754,648	\$764,054	\$773,744	\$783,726
29												
30	Typical user cost (8300 cf, 5/8" me	\$371	\$371	\$388	\$407	\$427	\$447	\$469	\$491	\$515	\$539	\$565
31	Percent Increase			4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%
51	Model Description:											
52	30% grant funding for phosphorus removal improvements with repayment starting in 2020											
53	No service charge but increase minimum charge and well user charge by 8% for FY2015 (escalating for future years)											
54	Allowance for customer non-payment of 1.9%											
55	Based on 1st quarter 2013 water consumption											

Estimated Project Cost

July 17, 2017

<i>Project Costs</i>		<i>Project Costs with Efficiency Enhancements</i>	
Construction Cost	\$11,850,000	Construction Cost	\$12,334,000
Engineering Services		Engineering Services	
- Design	\$1,192,145	- Design	\$1,192,145
- Construction Admin	\$1,637,000	- Construction Admin	\$1,637,000
SCADA Programming and Permitting	\$179,000	SCADA Programming and Permitting	\$179,000
Bonds and Interest	\$409,000	Bonds and Interest	\$409,000
Project Cost	\$15,267,000	Project Cost	\$15,751,000
Grant Funds (42.9%)	(\$6,551,000)	Grant Funds (42.6%)	(\$6,715,000)
Net Cost to Town After Grant	\$8,716,000	Net Cost to Town After Grant	\$9,036,000

Rate Study Projection

July 17, 2017 Council Briefing

Town of Plainville Sewer Rate Study

Tighe&Bond

A	B	C	D	E	F	G	H	I	J	K	L	
1	SCENARIO 3											
2	WORKSHEET 7											
3	Revenue and Expense Summary											
4												
5	Analysis Period	7/12 - 6/13 (Actual)	3 - 6/14 (Budgeted)	7/14 - 6/15	7/15 - 6/16	7/16 - 6/17	7/17 - 6/18	7/18 - 6/19	7/19 - 6/20	7/20 - 6/21	7/21 - 6/22	7/22 - 6/23
6	Fiscal Year	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
7												
8	Revenue											
9	User Charges	\$2,852,451	\$2,937,264	\$3,140,719	\$3,213,989	\$3,368,260	\$3,529,936	\$3,699,373	\$3,876,943	\$4,063,037	\$4,258,062	\$4,462,449
10	1.9% Allowance for Customer Non-Payment*											
				\$59,673.66	\$61,065.78	\$63,996.94	\$67,068.79	\$70,288.10	\$73,661.92	\$77,197.70	\$80,903.19	\$84,786.54
11	*Budgeted revenue from user charges for FY2013 was \$2,906,613 or 1.9% more than actual user charge revenue											
12	User Charges Less Allowance for Non-Payment											
				\$3,081,045	\$3,152,923	\$3,304,263	\$3,462,868	\$3,629,085	\$3,803,281	\$3,985,839	\$4,177,159	\$4,377,663
13												
14	Other Revenue Sources											
		\$194,318	\$140,500	\$150,500	\$153,510	\$156,580	\$158,146	\$159,727	\$161,325	\$162,938	\$164,567	\$166,213
15												
16	Total Revenue											
		\$3,046,769	\$3,077,764	\$3,231,545	\$3,306,433	\$3,460,843	\$3,621,014	\$3,788,813	\$3,964,606	\$4,148,777	\$4,341,727	\$4,543,876
17												
18	Expenses											
19	Existing Operational Costs											
		\$1,465,452	\$1,519,853	\$1,533,021	\$1,563,681	\$1,594,955	\$1,642,804	\$1,692,088	\$1,742,850	\$1,795,136	\$1,848,990	\$1,904,460
20	Debt Service											
		\$1,422,764	\$1,420,815	\$1,418,540	\$1,415,939	\$1,413,341	\$1,429,064	\$1,408,790	\$1,406,190	\$1,956,203	\$1,953,603	\$1,951,003
21	Other Costs/Additional O&M											
		\$443,800	\$424,676	\$380,670	\$386,783	\$393,019	\$449,379	\$455,867	\$867,484	\$874,234	\$881,118	\$888,141
22	Total Expense											
		\$3,332,016	\$3,365,344	\$3,332,231	\$3,366,403	\$3,401,315	\$3,521,247	\$3,556,744	\$4,016,524	\$4,625,573	\$4,683,711	\$4,743,603
23												
24	Revenue - Expenses											
		-\$285,247	-\$287,580	-\$100,685	-\$59,971	\$59,529	\$99,767	\$232,068	-\$51,918	-\$476,796	-\$341,985	-\$199,727
25												
26	Fund balance											
		\$2,344,685	\$2,057,105	\$1,956,420	\$1,896,449	\$1,955,978	\$2,055,745	\$2,287,813	\$2,235,895	\$1,759,100	\$1,417,115	\$1,217,387
27	Is Fund Balance > 2 months operating expense?											
				Yes								
28	2 months total expense											
				\$555,372	\$561,067	\$566,886	\$586,874	\$592,791	\$669,421	\$770,929	\$780,619	\$790,601
29												
30	Typical user cost (8300 cf, 5/8" meter)											
		\$371	\$371	\$400	\$407	\$427	\$447	\$469	\$491	\$515	\$539	\$565
31	% Increase - Standard charge per 1,000 CF Effluent Discharge											
				8.0%	1.67%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%
32	% Increase - Minimum Charge											
				8.0%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%
33	% Increase - Well Users											
				8.0%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%
51	Model Description:											
52	42.6% grant funding with repayment starting in 2021											

Project Schedule

