#### Plainville Town Council Work Session

#### Water Pollution Control Facility Upgrade Project

Presenter Steve Seigal

July 17, 2017

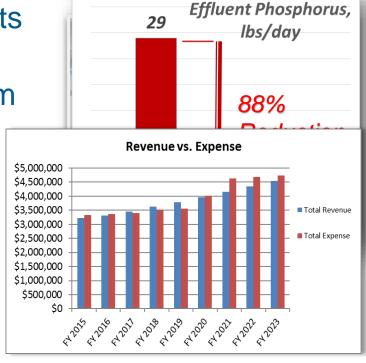


### **Key Project Goals**

Comply with new phosphorus limits

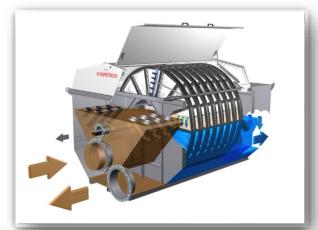
Improve sludge processing system

 Confirm previous sewer rate projections



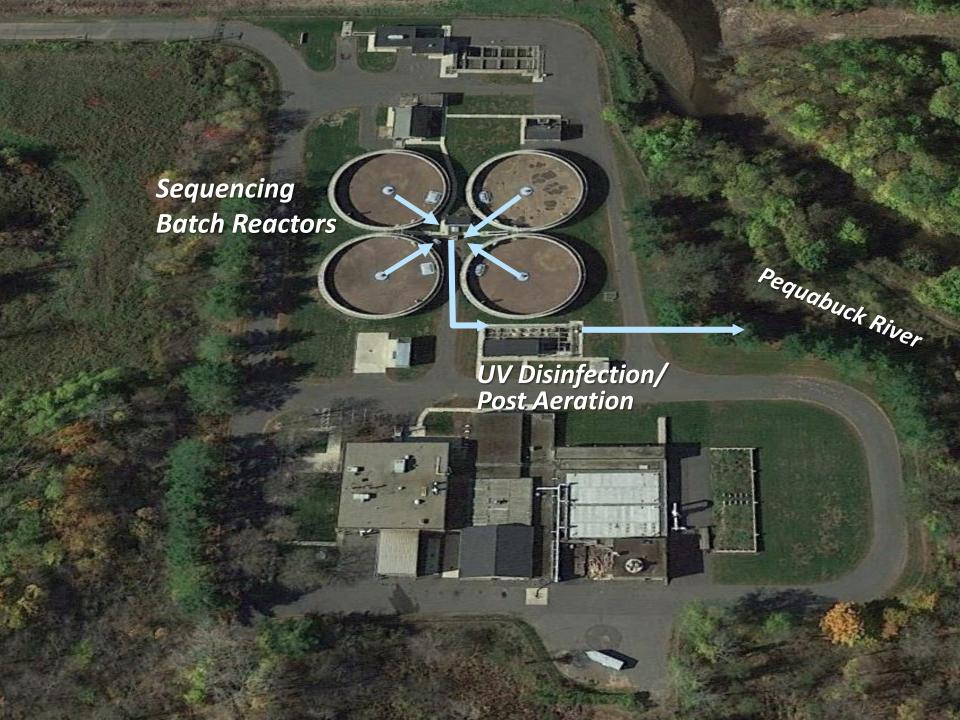
## A Cost-Effective, Proven System for Phosphorus Removal

- Conducted bench scale testing
- Selected the best technology





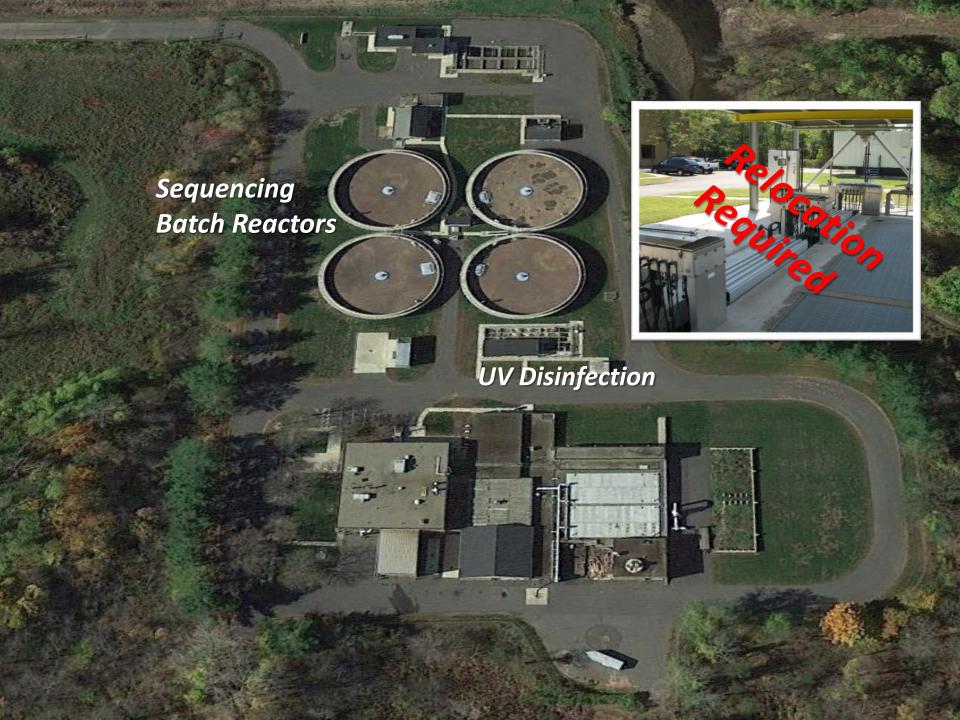


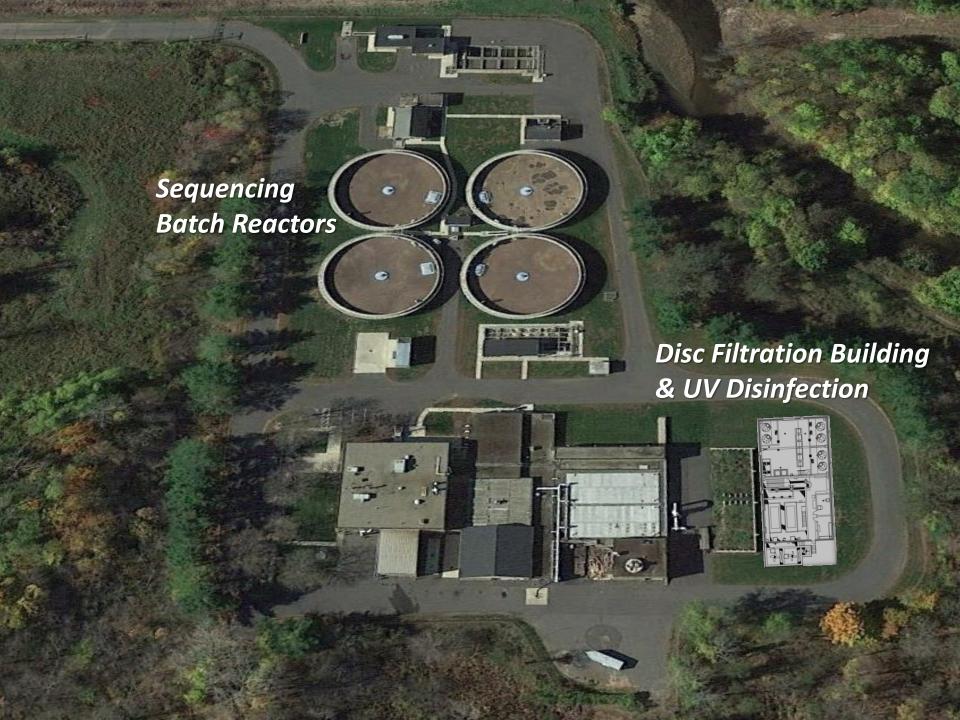


## CT DEEP Now Requires Measures to Reduce Flood Impacts



Effects of Tropical Storm Irene, August 2011

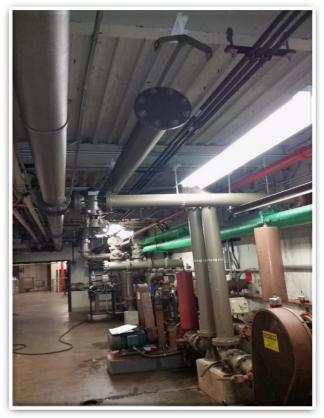




## Install New Sludge Processing System Improvements are Needed

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







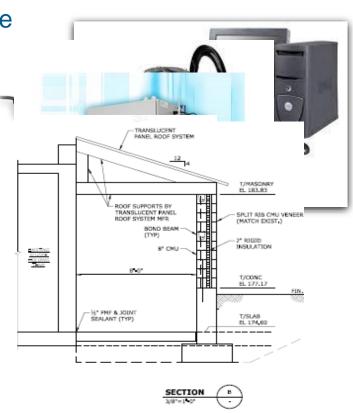
## Install New Sludge Processing Equipment in Former Lime Silo Room

- 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% Gran	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

				september 2	-, -014						
A	В	С	D	E	F	G	Н	ı	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-P	ayment*		\$58,638.50	\$61,453.15	\$64,402.90	\$67,494.24	\$70,733.96	\$74,129.19	\$77,687.39	\$81,416.39	\$85,324.38
*Budgeted revenue from user charge	s for FY2013 was \$2	,906,613 or 1.9% i	more than actual us	ser charge reve	enue						
12 User Charges Less Allowance for No	n-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								7			
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	ng expense?	'	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	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:			111								
52 30% grant funding for phosphorus re	moval improvements	with renaument of	arting in 2020								
53 No service charge but increase minir				lating for future	(Voare)						
54 Allowance for customer non-paymen		user charge by 67	o loi F12015 (escal	aulig for luture	years)						
55 Based on 1st quarter 2013 water cor											
wild dancer 2010 water cor	iodinption				4						



# Estimated Project Cost *July 17, 2017*

Project Costs	5	_	Project Costs with Efficiency Enhancements			
Construction Cost	\$11,850,000	Construction Cost	\$12,334,000			
Engineering Services - Design - Construction Admin	\$1,192,145 \$1,637,000	Engineering Services - Design - Construction Admin	\$1,192,145 \$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			

Tighe&Bond

## Rate Study Projection *July 17, 2017 Council Briefing*

#### Town of Plainville Sewer Rate Study

#### Tighe&Bond

Fiscal Year	1	н	1   ,	J K I	L
2   WORKSHEET 7   3   Revenue and Expense Summany					
A 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 E Fiscal Year FY 2013 FY 2014 FY 2015 FY 2016 FY 2017 FY 2018 FY 2019					
Fiscal Year					
Fiscal Year					
Revenue   Super Charges   \$2,852,451   \$2,937,264   \$3,140,719   \$3,213,989   \$3,368,260   \$3,529,936   \$3,699,973   \$3     19	7/19 - 6/20	7/18 - 6/19	7/19 - 6/20 7/2	20 - 6/21 7/21 - 6/22	7/22 - 6/23
User Charges   \$2,852,451   \$2,937,264   \$3,140,719   \$3,213,989   \$3,368,260   \$3,529,936   \$3,699,373   \$3.10   19% Allowance for Customer Non-Payment*   \$59,673.66   \$61,065.78   \$63,996,94   \$67,068.79   \$70,288.10   \$3.11   \$3.213,989   \$3,368,260   \$3,529,936   \$3,699,373   \$3.11   \$3.213,989   \$3,368,260   \$3,529,936   \$3,699,373   \$3.11   \$3.213,989   \$3,368,260   \$3,529,936   \$3,699,373   \$3.11   \$3.213,989   \$3,368,260   \$3,529,936   \$3,699,373   \$3.11   \$3.213,989   \$3,368,260   \$3,529,936   \$3,529,936   \$3,699,373   \$3.11   \$3.213,945   \$3,304,263   \$3,304,263   \$3,304,263   \$3,462,868   \$3,629,085   \$3.143,945   \$3,462,868   \$3,629,085   \$3.143,945   \$3,304,263   \$3,462,868   \$3,629,085   \$3.143,945   \$3,462,868   \$3,629,085   \$3.143,945   \$3,462,868   \$3,629,085   \$3.143,945   \$3,462,868   \$3,629,085   \$3.143,945   \$3,460,843   \$3,460,843   \$3,621,014   \$3,788,813   \$3.143,945   \$3,306,433   \$3,460,843   \$3,621,014   \$3,788,813   \$3.143,945   \$3,306,433   \$3,460,843   \$3,621,014   \$3,788,813   \$3.143,945   \$3,909,	FY 2020	FY 2019	FY 2020	FY 2021 FY 2022	FY 2023
User Charges   \$2,852,451   \$2,937,264   \$3,140,719   \$3,213,989   \$3,368,260   \$3,529,936   \$3,699,373   \$3,10   19% Allowance for Customer Non-Payment   \$59,673.66   \$61,065.78   \$63,996.94   \$67,068.79   \$70,288.10   \$3,11   *Budgeted revenue from user charges for FY2013 was \$2,906,613 or 1.9% more than actual user charge revenue   \$3,046,768   \$3,152,923   \$3,304,263   \$3,462,868   \$3,629,085   \$3,440,440,440   \$3,440,440,440,440   \$3,440,440   \$3,440,4					
1.9% Allowance for Customer Non-Payment*   \$59,673.66   \$61,065.78   \$63,996.94   \$67,068.79   \$70,288.10   \$11   Budgeted revenue from user charges for FY2013 was \$2,906,613 or 1.9% more than actual user charge revenue   \$3,081,045   \$3,152,923   \$3,304,263   \$3,462,868   \$3,629,085   \$3.33   \$3,462,868   \$3,629,085   \$3.33   \$3,462,868   \$3,629,085   \$3.33   \$3,462,868   \$3,629,085   \$3.33   \$3,462,868   \$3,629,085   \$3.33   \$3,462,868   \$3,629,085   \$3.33   \$3,462,868   \$3,629,085   \$3.33   \$3.34   \$					
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   \$3,140   \$3,081,045   \$3,081,045   \$3,152,923   \$3,304,263   \$3,462,868   \$3,629,085   \$3,081,045   \$3,081,045   \$3,081,045   \$3,152,923   \$3,304,263   \$3,462,868   \$3,629,085   \$3,081,045   \$3,081,045   \$3,152,923   \$3,304,263   \$3,462,868   \$3,629,085   \$3,081,045   \$3,081,045   \$3,162,083   \$3,162,043   \$3,162,043   \$3,162,043   \$3,162,043   \$3,162,043   \$3,162,043   \$3,162,043   \$3,162,043   \$3,162,044   \$3,788,813   \$3,174,045   \$3,281,045   \$3	\$3,876,943	\$3,699,373	\$3,876,943 \$4,	063,037 \$4,258,062	\$4,462,449
User Charges Less Allowance for Non-Payment   \$3,061,045   \$3,152,923   \$3,304,263   \$3,462,868   \$3,629,085   \$3,140,500   \$150,500   \$153,510   \$156,580   \$158,146   \$159,727   \$150,500   \$153,510   \$156,580   \$158,146   \$159,727   \$150,500   \$153,510   \$156,580   \$158,146   \$159,727   \$150,500   \$153,510   \$156,580   \$158,146   \$159,727   \$150,500   \$153,510   \$156,580   \$158,146   \$159,727   \$150,500   \$153,510   \$156,580   \$158,146   \$159,727   \$150,500   \$153,510   \$156,580   \$158,146   \$159,727   \$150,500   \$153,510   \$156,580   \$158,146   \$159,727   \$150,500   \$153,510   \$156,580   \$158,146   \$159,727   \$150,500   \$158,140   \$159,727   \$159,728   \$158,140   \$159,727   \$159,728   \$159,7	\$73,661.92	\$70,288.10	\$73,661.92 \$77	7,197.70 \$80,903.19	\$84,786.54
13   14   Other Revenue Sources   \$194,318   \$140,500   \$150,500   \$153,510   \$156,580   \$158,146   \$159,727     15					
14   Other Revenue Sources   \$194,318   \$140,500   \$150,500   \$153,510   \$156,580   \$158,146   \$159,727     15	\$3,803,281	\$3,629,085	\$3,803,281 \$3,	985,839 \$4,177,159	\$4,377,663
15   16   Total Revenue					
16         Total Revenue         \$3,046,769         \$3,077,764         \$3,231,545         \$3,306,433         \$3,460,843         \$3,621,014         \$3,788,813         \$1           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           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           21         Other Costs/Additional O&M         \$443,800         \$424,676         \$380,670         \$386,783         \$393,019         \$449,379         \$455,867           22         Total Expense         \$3,332,016         \$3,3365,344         \$3,332,231         \$3,366,403         \$3,401,315         \$3,521,247         \$3,556,744         \$4           23         Eund blance         \$2,344,685         \$2,057,105         \$1,956,420         \$1,896,449         \$1,955,978         \$2,055,745         \$2,287,813         \$2           27         Is Fund Balance > 2 months operating expense?         Yes         Yes         Yes         Yes         Yes         Yes         Yes         Yes	\$161,325	\$159,727	\$161,325 \$	162,938 \$164,567	\$166,213
17   18   Expenses					
18 Expenses         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           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           21 Other Costs/Additional O&M         \$443,800         \$424,676         \$380,670         \$386,783         \$393,019         \$449,379         \$455,867           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           23         4 Revenue - Expenses         -\$285,247         -\$287,580         -\$100,685         -\$59,971         \$59,529         \$99,767         \$232,068           25         5 Fund balance         \$2,344,685         \$2,057,105         \$1,956,420         \$1,896,449         \$1,955,978         \$2,055,745         \$2,287,813         \$3           27         1 Fund Balance > 2 months operating expense?         Yes         Yes <td< th=""><td>\$3,964,606</td><td>\$3,788,813</td><td>\$3,964,606 \$4,</td><td>148,777 \$4,341,727</td><td>\$4,543,876</td></td<>	\$3,964,606	\$3,788,813	\$3,964,606 \$4,	148,777 \$4,341,727	\$4,543,876
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           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           21 Other Costs/Additional O&M         \$443,800         \$424,676         \$380,670         \$386,783         \$393,019         \$449,379         \$455,867           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           23         4 Revenue - Expenses         -\$287,580         -\$100,685         -\$59,971         \$59,529         \$99,767         \$232,068           25         5					
20         Debt Service         \$1,422,764         \$1,420,815         \$1,418,540         \$1,415,939         \$1,413,341         \$1,429,064         \$1,408,790         \$1,416,700 <td></td> <td></td> <td></td> <td></td> <td></td>					
21         Other Costs/Additional O&M         \$443,800         \$424,676         \$380,670         \$386,783         \$393,019         \$449,379         \$455,867           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           23         4         Revenue - Expenses         -\$285,247         -\$287,580         -\$100,685         -\$59,971         \$59,529         \$99,767         \$232,068           25         5         5         5         5         5         \$9,9767         \$232,068           26         5         6         5<	\$1,742,850	\$1,692,088	\$1,742,850 \$1,	795,136 \$1,848,990	\$1,904,460
22 Total Expense         \$3,332,016         \$3,365,344         \$3,332,231         \$3,366,403         \$3,401,315         \$3,521,247         \$3,556,744         \$4,200           23 Pund Balance         \$2,344,685         \$2,057,105         \$1,956,420         \$1,896,449         \$1,955,978         \$2,057,745         \$2,287,813         \$3,556,744         \$3,556,744         \$3,556,744         \$4,800         <	\$1,406,190	\$1,408,790	\$1,406,190 \$1,	956,203 \$1,953,603	\$1,951,003
23   24   Revenue - Expenses   -\$285,247   -\$287,580   -\$100,685   -\$59,971   \$59,529   \$99,767   \$232,068     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   \$3,000   \$2,000   \$3,000	\$867,484	\$455,867	\$867,484 \$	874,234 \$881,118	\$888,141
24 Revenue - Expenses         -\$285,247         -\$287,580         -\$100,685         -\$59,971         \$59,529         \$99,767         \$232,068           26 Fund balance         \$2,344,685         \$2,057,105         \$1,956,420         \$1,896,449         \$1,955,978         \$2,055,745         \$2,287,813         \$3           27 Is Fund Balance > 2 months operating expense?         Yes         Yes <td< th=""><td>\$4,016,524</td><td>\$3,556,744</td><td>\$4,016,524 \$4,</td><td>625,573 \$4,683,711</td><td>\$4,743,603</td></td<>	\$4,016,524	\$3,556,744	\$4,016,524 \$4,	625,573 \$4,683,711	\$4,743,603
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   \$3,275   \$2,287,813   \$3,275					
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           27 Is Fund Balance > 2 months operating expense?         Yes	-\$51,918	\$232,068	-\$51,918 -\$	476,796 -\$341,985	-\$199,727
27         Is Fund Balance > 2 months operating expense?         Yes					
28 2 months total expense     \$555,372     \$561,067     \$566,886     \$586,874     \$592,791       29 months total expense     \$555,372     \$561,067     \$566,886     \$586,874     \$592,791       30 Typical user cost (8300 cf, 5/8" meter)     \$371     \$371     \$400     \$407     \$427     \$447     \$469       31 % Increase - Standard charge per 1,000 CF Effluent Discharge     8.0%     1.67%     4.8%     4.8%     4.8%       32 % Increase - Minimum Charge     8.0%     4.8%     4.8%     4.8%     4.8%	\$2,235,895	\$2,287,813	\$2,235,895 \$1,	759,100 \$1,417,115	\$1,217,387
29     30   Typical user cost (8300 cf, 5/8" meter)   \$371   \$371   \$400   \$407   \$427   \$447   \$469   \$31   \$8   Increase - Standard charge per 1,000 CF Effluent Discharge   8.0%   1.67%   4.8%	Yes	Yes	Yes	Yes Yes	Yes
30         Typical user cost (8300 cf, 5/8" meter)         \$371         \$400         \$407         \$427         \$447         \$469           31         % Increase - Standard charge per 1,000 CF Effluent Discharge         8.0%         1.67%         4.8%         4.8%         4.8%           32         % Increase - Minimum Charge         8.0%         4.8%         4.8%         4.8%         4.8%	\$669,421	\$592,791	\$669,421 \$	770,929 \$780,619	\$790,601
31       % Increase - Standard charge per 1,000 CF Effluent Discharge       8.0%       1.67%       4.8%       4.8%       4.8%         32       % Increase - Minimum Charge       8.0%       4.8%       4.8%       4.8%       4.8%					
32 % Increase - Minimum Charge 8.0% 4.8% 4.8% 4.8% 4.8%	\$491	\$469	\$491	\$515 \$539	\$565
	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% 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**

