

Trading Scenario for Domestic Non-Point Source

Reduction: Regionalization and Home Inspection Program for Unsewered Communities

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LDEQ Update



- Rapid suburban development has exceeded the pace of sewage infrastructure development, with Orleans and Jefferson Parish having the most extensive sewage collection and treatment systems in the State.
- Household waste in Suburban and Rural communities is done by aerated treatment units (ATUs) of 500 to 1500 gallons per day.
- Approximately 2/3rds of St. Tammany Parish domiciles are served by ATU systems.
- Approximately 50% of neighborhood ATU systems are non-functional.

Non-Point Source Reduction: WQ Trading

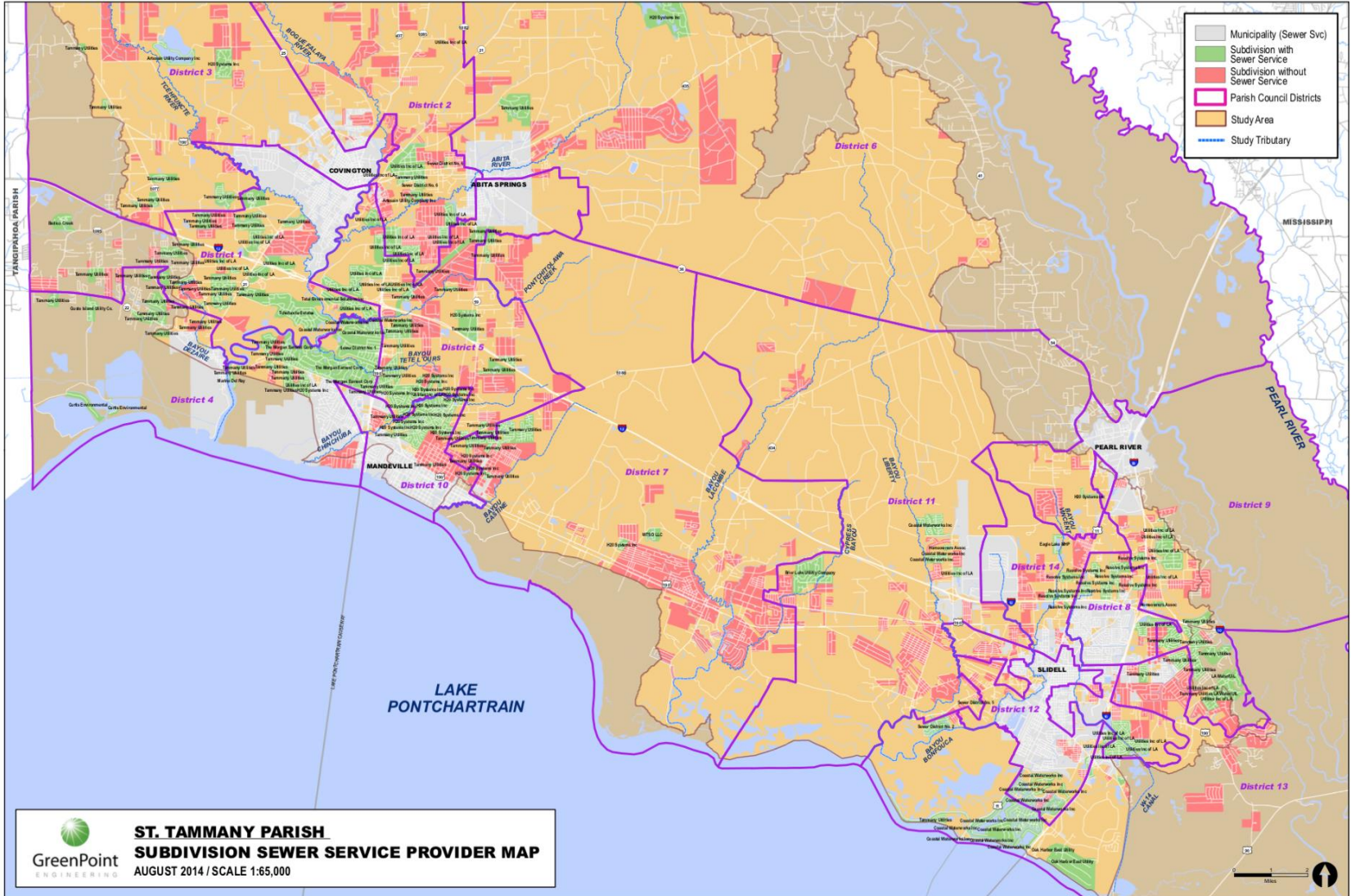


Home Inspection Program



Connection to Sewerage: Regionalization

St. Tammany Parish




ST. TAMMANY PARISH
SUBDIVISION SEWER SERVICE PROVIDER MAP
 AUGUST 2014 / SCALE 1:65,000

Non-Point Source Reduction: WQ Trading



Pre-
Inspection

Parameter	P1	P2	P3
Ammonia Nitrogen	6.70	34.4	2.14
BOD (5-day)	672	499	158
Nitrate (NO3-N)	14.6	0.09	14.4
Nitrite (NO2-N)	3.24	0.061	2.70
Nitrate+Nitrite-N	19.9	0.1	15.6
Total Kjeldahl Nitrogen	38.2	46.2	49.1
Total Phosphorus as P	22.6	19.5	27.1
Total Nitrogen	58.1	46.2	64.7

MAX	MIN	AVERAGE	SD
34.40	2.14	14.41	17.4584803
672.00	158.00	443.00	261.535848
14.60	0.09	9.70	8.32021835
3.24	0.06	2.00	1.70107623
19.90	0.10	11.87	10.4145731
49.10	38.20	44.50	5.64535207
27.10	19.50	23.07	3.8214308
64.70	46.20	56.33	9.37567775

Post-
Inspection

Parameter	FF1	FF3
Ammonia Nitrogen	15.7	18.7
BOD (5-day)	80	60
Nitrate (NO3-N)	0.09	0.09
Nitrite (NO2-N)	0.061	0.061
Nitrate+Nitrite-N	0.1	0.1
Total Kjeldahl Nitrogen	27.6	24.4
Total Phosphorus as P	14.5	15.6
Total Nitrogen	27.6	24.4

MAX	MIN	AVERAGE	SD
18.7	15.7	17.2	2.12132034
80.0	60.0	70.0	14.1421356
0.1	0.1	0.1	0
0.1	0.1	0.1	0
0.1	0.1	0.1	0
27.6	24.4	26.0	2.2627417
15.6	14.5	15.1	0.77781746
27.6	24.4	26.0	2.2627417

Septic
System

Parameter	1-Sep
Ammonia Nitrogen	9.55
BOD (5-day)	371
Nitrate (NO3-N)	0.09
Nitrite (NO2-N)	0.061
Nitrate+Nitrite-N	0.1
Total Kjeldahl Nitrogen	37.6
Total Phosphorus as P	8.25
Total Nitrogen	37.6



Connection to Sewage

Connection of St. Tammany Parish Neighborhood to Sewage Treatment*

	1	2	3	4	5		
Neighborhood Name	Number of Homes	Gallons per Day (MGD)	BOD Improvement (lb/day)	TKN Improvement (lb/day)	Total Oxidizable Material (lb/day)	Total Phosphorus (lb/d)	Cost for Regionalization*
Bayou Heights, Lacombe	72	0.036	124.00	12.31	242.62	6.00	\$ 7,446,500.00
Choctaw Springs, Lacombe	8	0.004	13.78	1.37	26.96	0.67	\$ 2,398,600.00
Fisherman's Haven, Lacombe	28	0.014	48.22	4.79	94.35	2.34	\$ 1,032,700.00
Forest Glen, Lacombe	289	0.145	497.72	49.41	973.87	24.10	\$ 11,608,500.00
Forest Glen Farm Lots, Lacombe	105	0.053	180.83	17.95	353.83	8.76	\$ 11,594,800.00
Lacombe Park, Lacombe	302	0.151	520.11	51.63	1017.67	25.19	\$ 18,165,800.00
Acadian Estates, Bayou Liberty	35	0.018	60.28	5.98	117.94	2.92	\$ 3,713,600.00
Bayou Paquet Estates, BL	92	0.046	158.44	15.73	310.02	7.67	\$ 7,343,500.00
Timber Ridge, BL	111	0.056	191.17	18.98	374.05	9.26	\$ 1,917,300.00
Slidell Manor, BL	259	0.130	446.05	44.28	872.77	21.60	\$ 6,885,500.00
Abita Nursery, Abita River	102	0.051	175.67	17.44	343.72	8.51	\$ 6,507,800.00
Alpine Village, Abita River	20	0.010	34.44	3.42	67.40	1.67	\$ 1,404,300.00
Mailleville, Abita River	103	0.052	177.39	17.61	347.09	8.59	\$ 5,537,600.00
Tammany Hills, Abita River	1337	0.669	2302.59	228.59	4505.39	111.51	\$ 27,952,800.00
West Abita Springs, Abita River	182	0.091	313.44	31.12	613.30	15.18	\$ 8,116,600.00



Connection to Sewage

Regionalization

BOD Reduction (\$/lb)	TKN Reduction (\$/lb)	Total Ox Reduction (\$/lb)	Total Phosphorus Reduction (\$/lb)	BOD Cost per Year (\$/yr)	TKN Cost per Year (\$/yr)	Total Ox Cost per Year (\$/yr)	Phosphorus Cost per Year (\$/yr)
\$ 60,052.85	\$ 604,922.57	\$ 30,691.53	\$ 1,240,091.26	\$ 2,402.11	\$ 24,196.90	\$ 1,227.66	\$ 49,603.65
\$ 174,093.17	\$ 1,753,670.23	\$ 88,974.73	\$ 3,595,023.98	\$ 6,963.73	\$ 70,146.81	\$ 3,558.99	\$ 143,800.96
\$ 21,415.59	\$ 215,722.89	\$ 10,944.98	\$ 442,231.93	\$ 856.62	\$ 8,628.92	\$ 437.80	\$ 17,689.28
\$ 23,323.42	\$ 234,940.75	\$ 11,920.02	\$ 481,628.54	\$ 932.94	\$ 9,397.63	\$ 476.80	\$ 19,265.14
\$ 64,119.16	\$ 645,883.29	\$ 32,769.73	\$ 1,324,060.75	\$ 2,564.77	\$ 25,835.33	\$ 1,310.79	\$ 52,962.43
\$ 34,927.02	\$ 351,825.79	\$ 17,850.34	\$ 721,242.87	\$ 1,397.08	\$ 14,073.03	\$ 714.01	\$ 28,849.71
\$ 61,608.55	\$ 620,593.42	\$ 31,486.61	\$ 1,272,216.51	\$ 2,464.34	\$ 24,823.74	\$ 1,259.46	\$ 50,888.66
\$ 46,347.80	\$ 466,869.35	\$ 23,687.22	\$ 957,082.16	\$ 1,853.91	\$ 18,674.77	\$ 947.49	\$ 38,283.29
\$ 10,029.54	\$ 101,029.26	\$ 5,125.85	\$ 207,109.99	\$ 401.18	\$ 4,041.17	\$ 205.03	\$ 8,284.40
\$ 15,436.53	\$ 155,494.78	\$ 7,889.23	\$ 318,764.29	\$ 617.46	\$ 6,219.79	\$ 315.57	\$ 12,750.57
\$ 37,046.56	\$ 373,176.35	\$ 18,933.59	\$ 765,011.52	\$ 1,481.86	\$ 14,927.05	\$ 757.34	\$ 30,600.46
\$ 40,770.29	\$ 410,686.09	\$ 20,836.69	\$ 841,906.47	\$ 1,630.81	\$ 16,427.44	\$ 833.47	\$ 33,676.26
\$ 31,217.51	\$ 314,459.30	\$ 15,954.50	\$ 644,641.57	\$ 1,248.70	\$ 12,578.37	\$ 638.18	\$ 25,785.66
\$ 12,139.70	\$ 122,285.23	\$ 6,204.30	\$ 250,684.72	\$ 485.59	\$ 4,891.41	\$ 248.17	\$ 10,027.39
\$ 25,895.04	\$ 260,845.20	\$ 13,234.32	\$ 534,732.65	\$ 1,035.80	\$ 10,433.81	\$ 529.37	\$ 21,389.31



Home Inspection Program

LPBF Homesystem Inspection Program - Projected Costs for Neighborhoods in St. Tammany Parish

Neighborhood Name	Number of Homes	Gallons per Day (MGD)	1	2	3	4	5	Cost for Home Inspection Program
			BOD Improvement (lb/day)	TKN Improvement (lb/day)	Total Oxidizable Material (lb/day)	Total Phosphorus (lb/d)		
Bayou Heights, Lacombe	72	0.036	55.99	2.85	97.11	1.50	\$	21,600.00
Choctaw Springs, Lacombe	8	0.004	6.22	0.32	10.79	0.17	\$	2,400.00
Fisherman's Haven, Lacombe	28	0.014	21.78	1.11	37.77	0.58	\$	8,400.00
Forest Glen, Lacombe	289	0.145	224.76	11.45	389.80	6.03	\$	79,475.00
Forest Glen Farm Lots, Lacombe	105	0.053	81.66	4.16	141.62	2.19	\$	30,975.00
Lacombe Park, Lacombe	302	0.151	234.87	11.96	407.33	6.30	\$	81,540.00
Acadian Estates, Bayou Liberty	35	0.018	27.22	1.39	47.21	0.73	\$	10,500.00
Bayou Paquet Estates, BL	92	0.046	71.55	3.64	124.09	1.92	\$	27,600.00
Timber Ridge, BL	111	0.056	86.33	4.40	149.72	2.31	\$	32,190.00
Slidell Manor, BL	259	0.130	201.43	10.26	349.34	5.40	\$	64,750.00
Abita Nursery, Abita River	102	0.051	79.33	4.04	137.58	2.13	\$	30,600.00
Alpine Village, Abita River	20	0.010	15.55	0.79	26.98	0.42	\$	6,000.00
Mailleville, Abita River	103	0.052	80.10	4.08	138.93	2.15	\$	29,870.00
Tammany Hills, Abita River	1337	0.669	1039.79	52.97	1803.33	27.88	\$	331,576.00
West Abita Springs, Abita River	182	0.091	141.54	7.21	245.48	3.79	\$	50,960.00



Home Inspection Program

Home Inspection Program

BOD Reduction (\$/lb)	TKN Reduction (\$/lb)	Total Ox Reduction (\$/lb)	Total Phosphorus Reduction (\$/lb)	BOD Cost per Year (\$/yr)	TKN Cost per Year (\$/yr)	Total Ox Cost per Year (\$/yr)	Phosphorus Cost per Year (\$/yr)
\$ 385.75	\$ 7,572.89	\$ 222.42	\$ 14,388.49	\$ 771.50	\$ 15,145.78	\$ 444.84	\$ 28,776.98
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\$ 385.75	\$ 7,572.89	\$ 222.42	\$ 14,388.49	\$ 771.50	\$ 15,145.78	\$ 444.84	\$ 28,776.98
\$ 353.60	\$ 6,941.81	\$ 203.89	\$ 13,189.45	\$ 707.21	\$ 13,883.63	\$ 407.77	\$ 26,378.90
\$ 379.32	\$ 7,446.67	\$ 218.72	\$ 14,148.68	\$ 758.64	\$ 14,893.35	\$ 437.43	\$ 28,297.36
\$ 347.18	\$ 6,815.60	\$ 200.18	\$ 12,949.64	\$ 694.35	\$ 13,631.20	\$ 400.36	\$ 25,899.28
\$ 385.75	\$ 7,572.89	\$ 222.42	\$ 14,388.49	\$ 771.50	\$ 15,145.78	\$ 444.84	\$ 28,776.98
\$ 385.75	\$ 7,572.89	\$ 222.42	\$ 14,388.49	\$ 771.50	\$ 15,145.78	\$ 444.84	\$ 28,776.98
\$ 372.89	\$ 7,320.46	\$ 215.01	\$ 13,908.87	\$ 745.78	\$ 14,640.92	\$ 430.02	\$ 27,817.75
\$ 321.46	\$ 6,310.74	\$ 185.35	\$ 11,990.41	\$ 642.92	\$ 12,621.48	\$ 370.70	\$ 23,980.82
\$ 385.75	\$ 7,572.89	\$ 222.42	\$ 14,388.49	\$ 771.50	\$ 15,145.78	\$ 444.84	\$ 28,776.98
\$ 385.75	\$ 7,572.89	\$ 222.42	\$ 14,388.49	\$ 771.50	\$ 15,145.78	\$ 444.84	\$ 28,776.98
\$ 372.89	\$ 7,320.46	\$ 215.01	\$ 13,908.87	\$ 745.78	\$ 14,640.92	\$ 430.02	\$ 27,817.75
\$ 318.89	\$ 6,260.25	\$ 183.87	\$ 11,894.48	\$ 637.77	\$ 12,520.51	\$ 367.74	\$ 23,788.97
\$ 360.03	\$ 7,068.03	\$ 207.59	\$ 13,429.26	\$ 720.07	\$ 14,136.06	\$ 415.19	\$ 26,858.51



Next Steps

- Trade Discussion in different formats:
 - Bilateral negotiation
 - Brokered trade
 - Exchange market?
- Program Design and Framework: Next Stakeholder Meeting
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