

## TOWNSEND TOWNSHIP

The township is located in the northeast corner of Sandusky County and the 2010 census stated that 1,620 people live in the unincorporated portions of the Township. The total land area is 32.5 square miles at an elevation of 604 feet. No municipalities are located in the township although the unincorporated community of Vickery and White's Landing are in the township.

Additional demographic and population projections for Townsend Township are as follows:

	2010 Census	Square Mile	Population/ Square Mile	MHI	LMI %
Townsend Township	1,620	32.5	49.8	\$47,206	39.4

	2010 Population	2010 Estimated Water Demand (100 gpcd)	2010 Estimated Water Demand/ Square Mile	2030 Population Estimate*	2030 Estimated Water Demand (100 gpcd)	2030 Estimated Water Demand/ Square Mile
Townsend Township	1,620	162,000 gpd	4,985 gpd	1,524	152,400 gpd	4,689 gpd
* Ohio Department of Development - Sandusky County Projected Rate of Change - .059% to 2030						

Groundwater Resources - The aquifer for the entire township is carbonate in limestone-dolomite bedrock. The water has high amounts of hardness, dissolved solids, hydrogen sulfide and sulfates. Depth to bedrock is between 10 to 60 feet with water yields in the 10 to 20 gpm range.

Surface Water Resources - There are a number of small creeks and streams that flow north to northeast to Lake Erie. None of these streams will support a regional water system, but they would permit small wastewater treatment plant discharges.

Municipal Public Water Systems - There are no public water treatment facilities within the township. The Northern Ohio Rural Water Authority provides potable water to the majority of the rural areas within the Township.

Wastewater Treatment Systems - There are no public or private NPDES permitted wastewater treatment facilities.

#### Proposed Water Service

Future water service needs within Townsend Township would be provided by the Northern Ohio Rural Water Authority. There are no planned water service needs at the present time.

#### Critical Sewage Areas:

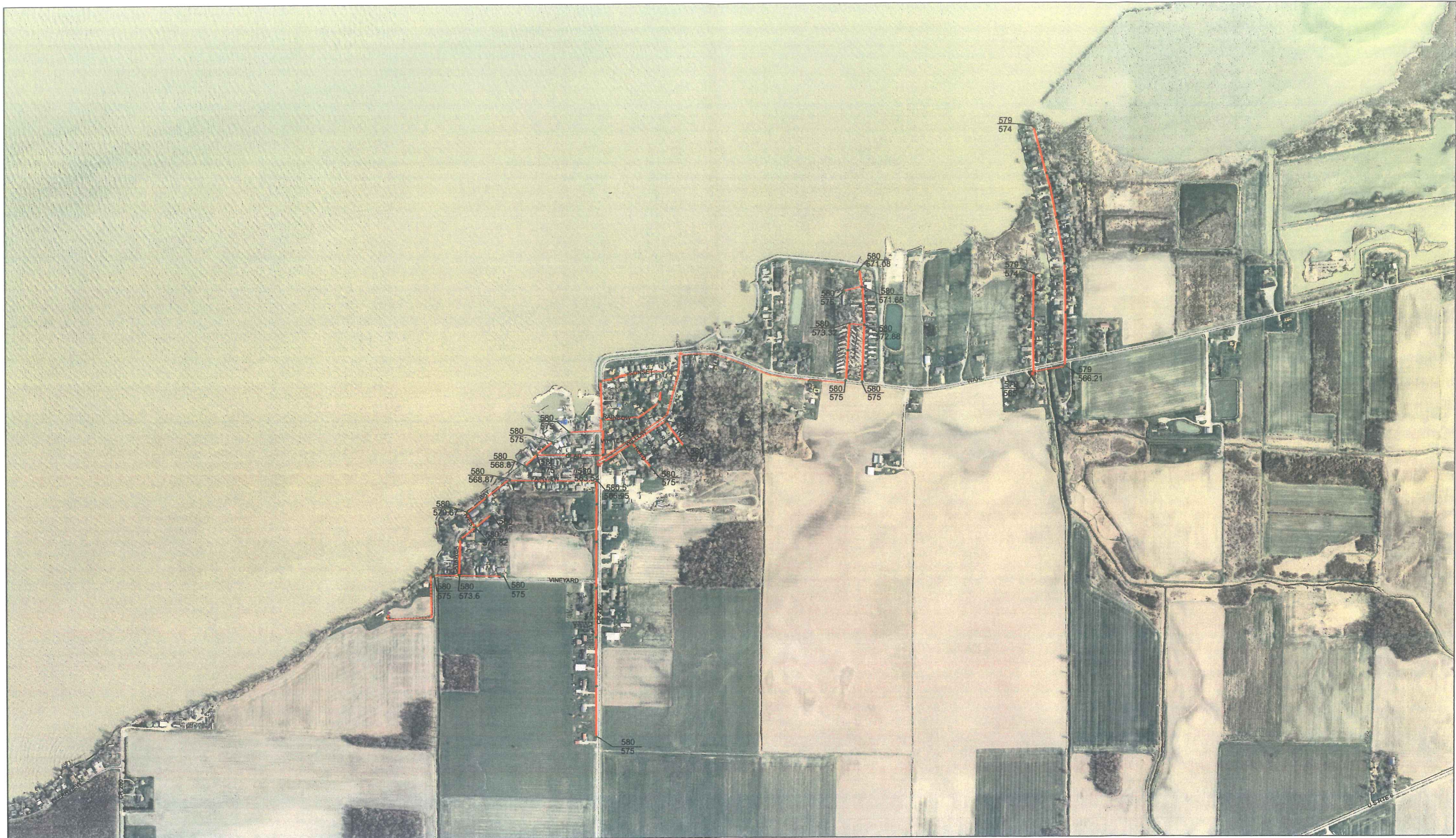
The Sandusky County Health Department, Ohio EPA, and TMACOG has identified Critical Sewage Areas which would include failed or failing onsite sewage systems. System failures could lead to surface and/or groundwater contamination or public health nuisances. These areas have been determined to be places where onsite sewage problems cannot be solved by conventional system upgrade or replacement. These areas became a priority for the Health Department and Ohio EPA to conduct sanitary surveys and general plans for providing public sanitary collection system and treatment alternatives.

White's Landing (SA-09) and Vickery (SA-13) are listed as Critical Sewage Areas in Townsend Township.

#### Proposed Sanitary Sewer Service

The White's Landing (SA-09) Critical Sewage Area consists of approximately 50 houses, marina, and a few commercial businesses. The area is on the Sandusky Bay and covers approximately 20 acres. To the east of the White's Landing Area, the unincorporated community of Springbrook which is located in Erie County along with a trailer park are areas that if a wastewater treatment facility for White's Landing is being considered some discussion should occur to possibly include these two (2) areas. The Erie County Sanitary Engineer and the Board of Health authorized a Wastewater Collection and Treatment General Plan for the Village of Bayview and the unincorporated areas of Bay Bridge, Crystal Rock, and White's Landing. The White's Landing proposed collection and treatment layout included Springbrook, the trailer park, and the residences on Wahl Road, Harding Road, and Wilson Avenue. This area consisted of 195 service connections and the treatment alternatives were based on an average daily design flow of 90,000 gpd.

The unincorporated community of Vickery has approximately 80 residents which covers 35 acres of all single family dwellings. The Vickery (SA-13) Critical Sewage Area also includes residences on Vickery Road.



- Whites Landing Proposed Grinder Pump
- Whites Landing Proposed Pump Station
- Whites Landing Proposed Manhole
- Whites Landing Proposed Forcemain 4"
- Whites Landing Proposed Sanitary



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4/27/2014  
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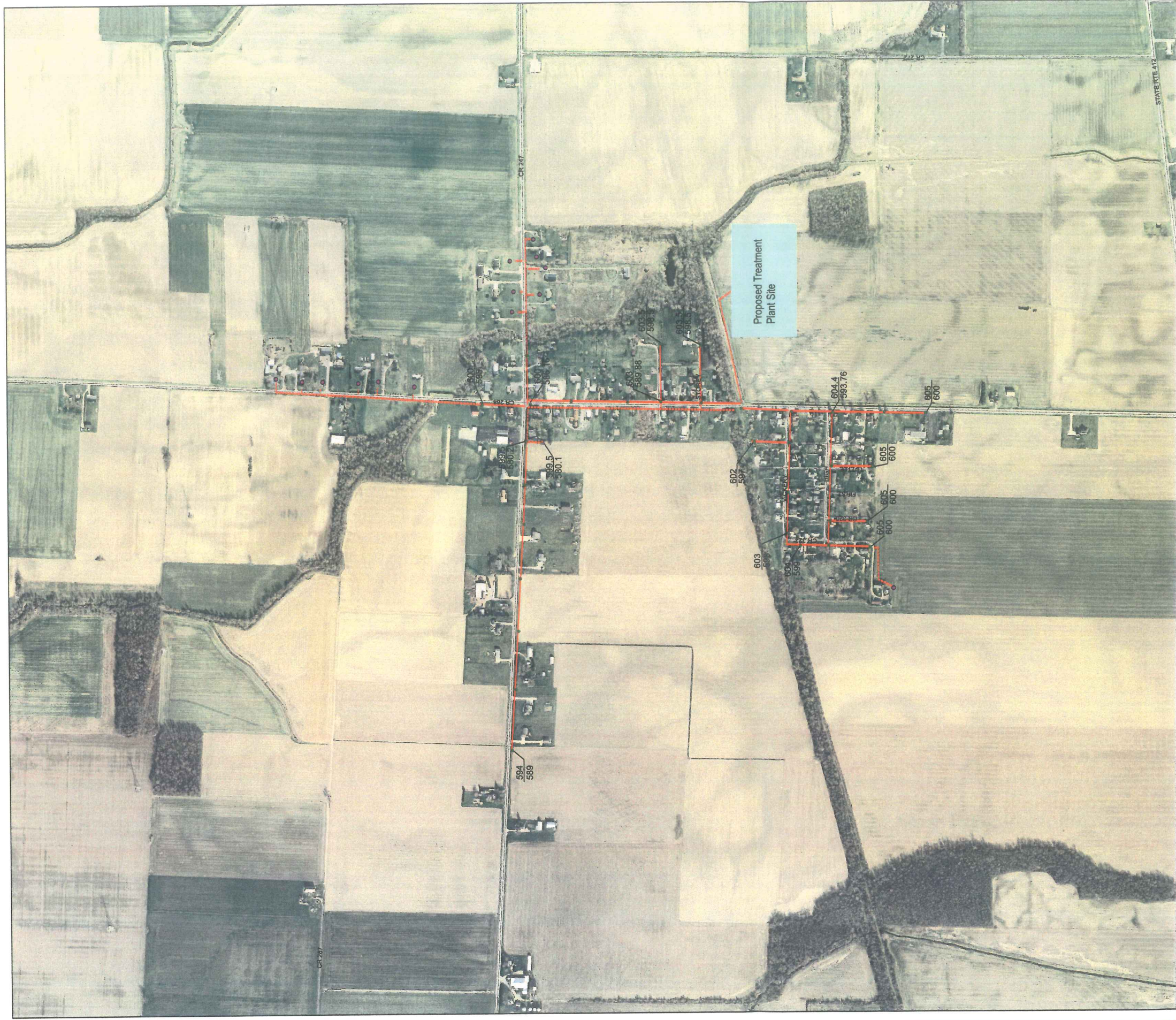
**CRITICAL AREA- SA-09  
TOWNSEND TOWNSHIP  
SANDUSKY COUNTY, OHIO  
PLATE I-1**

SANDUSKY COUNTY  
COMPREHENSIVE WATER & SEWER  
GENERAL PLAN



Estimated construction costs for sanitary sewer service are listed as follows:

TABLE I-1 WHITES LANDING AREA SA-09 CONVENTIONAL GRAVITY SEWERS					
Item No.	Description	Quantity	Unit	Unit Cost	Total Cost
1	8" Gravity Sanitary Sewers	15,565	L.F.	\$65	\$1,011,725
2	6" Sanitary Laterals	259	Each	\$1,300	\$336,700
3	Manholes	61	Each	\$3,500	\$213,500
4	Asphalt Pavement Replacement	3,548	S.Y.	\$40	\$141,920
5	Driveway Replacement	6,714	S.Y.	\$45	\$302,130
6	Seeding, Mulching, & Rest.	1	L.S.	\$25,000	\$25,000
7	Storm Sewer Replacement	2,000	L.F.	\$11	\$22,000
8	Stone Pavement	767	S.Y.	\$30	\$23,010
9	Flushing Connections	2	Each	\$750	\$1,500
10	Grinder Pump	12	Each	\$7,200	\$86,400
11	1 ½" Service Lines	4	Each	\$450	\$1,800
12	6" Force Main	2,630	L.F.	\$30	\$78,900
13	4" Force Main	1,300	L.F.	\$25	\$32,500
14	1 ½" Force Main	300	L.F.	\$20	\$6,000
15	Pump Station	1	Each	\$225,000	\$225,000
16	Preconstruction Video	1	L.S.	\$2,500	\$2,500
17	Traffic Maintenance	1	L.S.	\$7,500	\$7,500
18	Mobilization and Bonds	1	L.S.	\$27,000	\$27,000
	<b>SUBTOTAL</b>				\$2,545,085
	Contingencies (10%)				\$254,509
	<b>TOTAL OPINION OF CONSTRUCTION COST</b>				\$2,799,594
	Other Fees (20%) Legal, Design, Engineering, Financing, Construction Observation, Testing, Interest During Construction, and Review Fees				\$509,017
	<b>TOTAL OPINION OF PROBABLE COSTS</b>				\$3,308,611
	Notes: Project estimate assumes no rock excavation required and abandonment of septic tanks is the responsibility of the homeowner				



- Vickery Proposed Pump Station
- Vickery Proposed Manhole
- Vickery Proposed Grinder Pump
- Vickery Proposed F.M.
- Vickery Proposed Sanitary



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4/27/2014  
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**CRITICAL AREA- SA-13  
TOWNSEND TOWNSHIP  
SANDUSKY COUNTY, OHIO  
PLATE I-2**

**SANDUSKY COUNTY  
COMPREHENSIVE WATER & SEWER  
GENERAL PLAN**



**POGEMEYER  
DESIGN GROUP**

TABLE I-2  
VICKERY SA-13  
CONVENTIONAL GRAVITY SEWERS

Item No.	Description	Quantity	Unit	Unit Cost	Total Cost
1	8" Gravity Sanitary Sewers	10,010	L.F.	\$65	\$650,650
2	6" Sanitary Laterals	97	Each	\$1,300	\$126,100
3	Manholes	32	Each	\$3,500	\$112,000
4	Asphalt Pavement Replacement	208	S.Y.	\$40	\$8,320
5	Driveway Replacement	544	S.Y.	\$45	\$24,480
6	Seeding, Mulching, & Rest.	1	L.S.	\$25,000	\$25,000
7	Storm Sewer Replacement	2,000	L.F.	\$11	\$22,000
8	Grinder Pump	15	Each	\$7,200	\$108,000
9	2" Force Main	2,340	L.F.	\$23	\$53,820
10	1 ½" Force Main	780	L.F.	\$20	\$15,600
11	Preconstruction Video	1	L.S.	\$2,500	\$2,500
12	Traffic Maintenance	1	L.S.	\$7,500	\$7,500
13	Mobilization and Bonds	1	L.S.	\$27,000	\$27,000
	<b>SUBTOTAL</b>				\$1,182,970
	Contingencies (10%)				\$118,297
	<b>TOTAL OPINION OF CONSTRUCTION COST</b>				\$1,301,267
	Other Fees (20%) Legal, Design, Engineering, Financing, Construction Observation, Testing, Interest During Construction, and Review Fees				\$236,594
	<b>TOTAL OPINION OF PROBABLE COSTS</b>				\$1,537,861
	Notes: Project estimate assumes no rock excavation required and abandonment of septic tanks is the responsibility of the homeowner				

TABLE I-3  
VICKERY SA-13  
EXTENDED AERATION  
WITH TERTIARY SLOW SAND FILTERS  
DESIGN FLOW - 30,000 GPD

Item No.	Item	Estimated Cost
1	Pretreatment Facilities (Trash Trap/Aerated Flow EQ) Extended Aeration Plant (Package) Alum Feed Dosing Tank with Submersible Pumps/Controls Distribution Box Fixed Media Clarifiers and Slow Sand Filters Chlorination/Dechlorination Tank/Post Aeration Flow Meter and Recorder Aerated Sludge Holding Tank	\$295,000.00
2	Outfall Sewer to Receiving Stream with Manhole	15,000.00
3	Control and Storage Building	85,000.00
4	Standby Power	40,000.00
5	Non-Component Costs (Includes piping and electrical)	75,000.00
6	Site Work (including Grading, Seeding, Walks, Etc.)	85,000.00
7	Drives and Fences	50,000.00
	<b>SUBTOTAL</b>	<b>\$645,000.00</b>
	10% Contingencies	64,500.00
	Land Purchase (1 acre)	10,000.00
	<b>TOTAL OPINION OF CONSTRUCTION COSTS</b>	<b>\$719,500.00</b>



TABLE I-4  
VICKERY SA-13  
30,000 GPD  
ESTIMATED COST OF OPERATION AND MAINTENANCE -  
EXTENDED AERATION PLANT WITH TERTIARY TREATMENT

Item	Estimated Annual Cost
Labor *	\$4,600.00
Administration and Billings	\$5,200.00
Utilities	\$8,700.00
Chemicals	\$600.00
Replacement	\$1,700.00
Contract Sludge Hauling	\$3,000.00
Contract Lab	\$2,800.00
Insurance and Miscellaneous Fees	\$1,100.00
<b>TOTAL</b>	<b>\$27,700.00</b>

\* The treatment works at .030 mgd will require a Class 1 Operator of Record at a minimum. The minimum staffing requirement is 3 days/week for a minimum of 1.5 hour per week. The labor estimate is based on 1 hour/day or 5 hours/week. The above estimate is only intended to be used as a comparison to different treatment technologies and processes. Actual annual costs will be based on Sandusky County's operations and maintenance.