

Act 537

Sewage Facilities Plan: Overview

East Hanover Township, Dauphin County, PA

Originally presented July 8th, 2010

Prepared by LTL Consultants, Ltd.

& Stein Consulting Group, LLC.

Purpose of Act 537 Planning

- Required by State to Protect Public Health & Water Resources
- Regular updates are required
- 5 to 10-Year Required Planning Scope
- Identifies Existing Challenges
- Anticipates Future Needs
- Quantifies Alternatives to Problems
- Determine if Sewer Service Areas are needed to protect public health

A little History

- No complete 537 Plan since 1988
- 2004 DEP issues a consent order for EHT to Build the Dairy Lane Plant and complete a new 537 Plan
- 2008 With the DEP monitoring EHT research showed failing systems in Engelwood and Partridge Hills.
- DEP Required we sewer those two sections immediately while we finish the plan.
- 2011 DEP accepts new 537 Plan and gives us an unprecedented 10 years to comply
- A 537 Plan costs about \$200,000 to complete

Plan of Action per PA Regulations

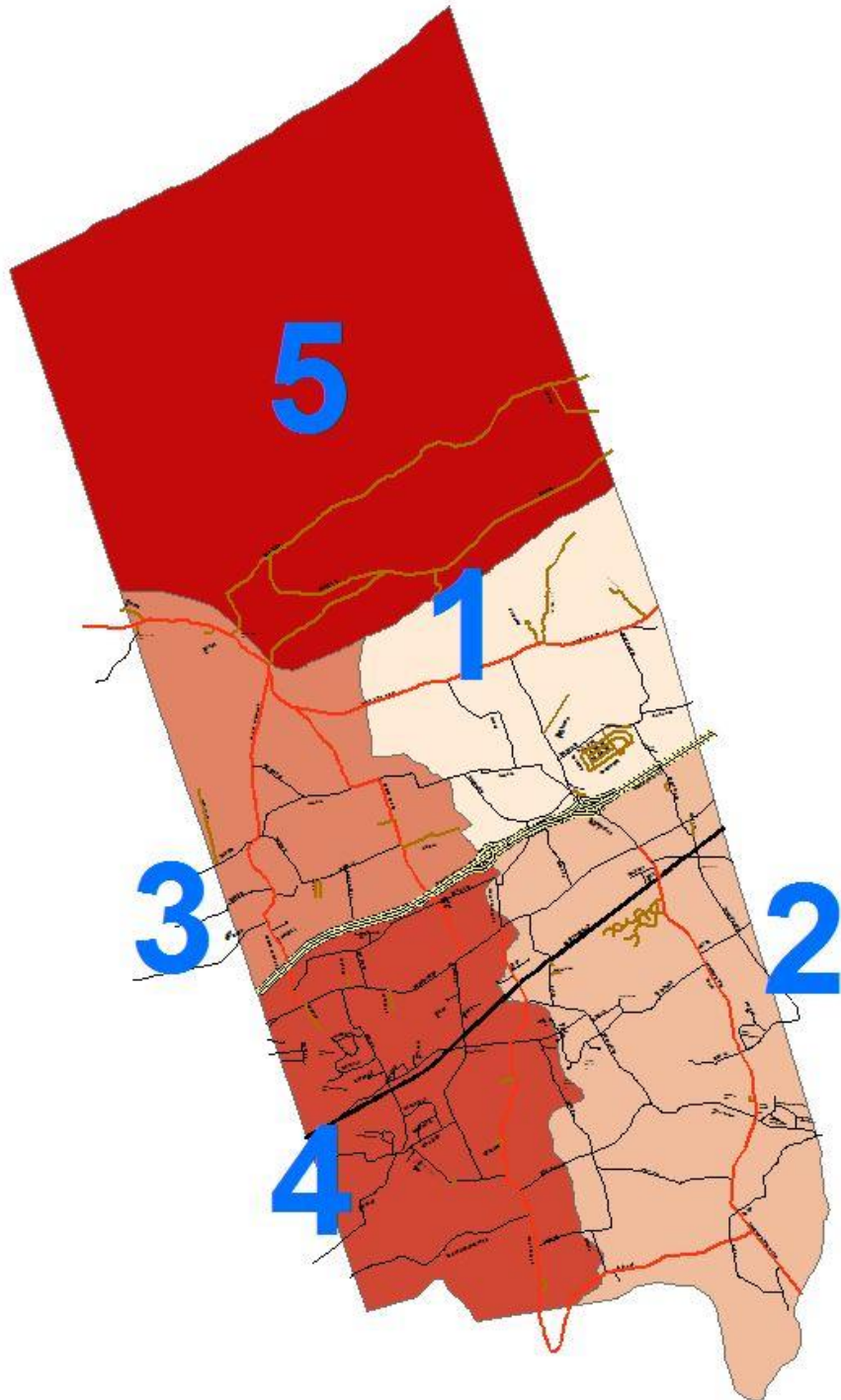
- Review Previous Planning
- Present Existing Conditions
 - Geographic Analysis
 - Sanitary Needs Analysis
- Projection of Future Needs
 - Identify Problem Areas
 - Analyze Growth Potential
- Alternatives
 - Identification
 - Evaluation

Research – Existing Conditions

- Physical / Demographic Analysis
 - Natural Features
 - Potable Water Supplies
 - Existing Service
- Existing Sewage Facilities
 - Condition of Public Systems
 - Condition of On Lot Systems (OLDS)
- Growth Analysis
 - Existing and Future Land Development
 - Current Land Use Controls

Research – Problem Areas

- Sanitary Needs Survey
 - Malfunctioning On Lot Systems
- Well Water Sampling Program
 - Coliform Bacteria
 - Fecal Coliform Bacteria
 - Nitrate Level
- On Lot Suitability
 - Soil Suitability
 - Natural Restrictions

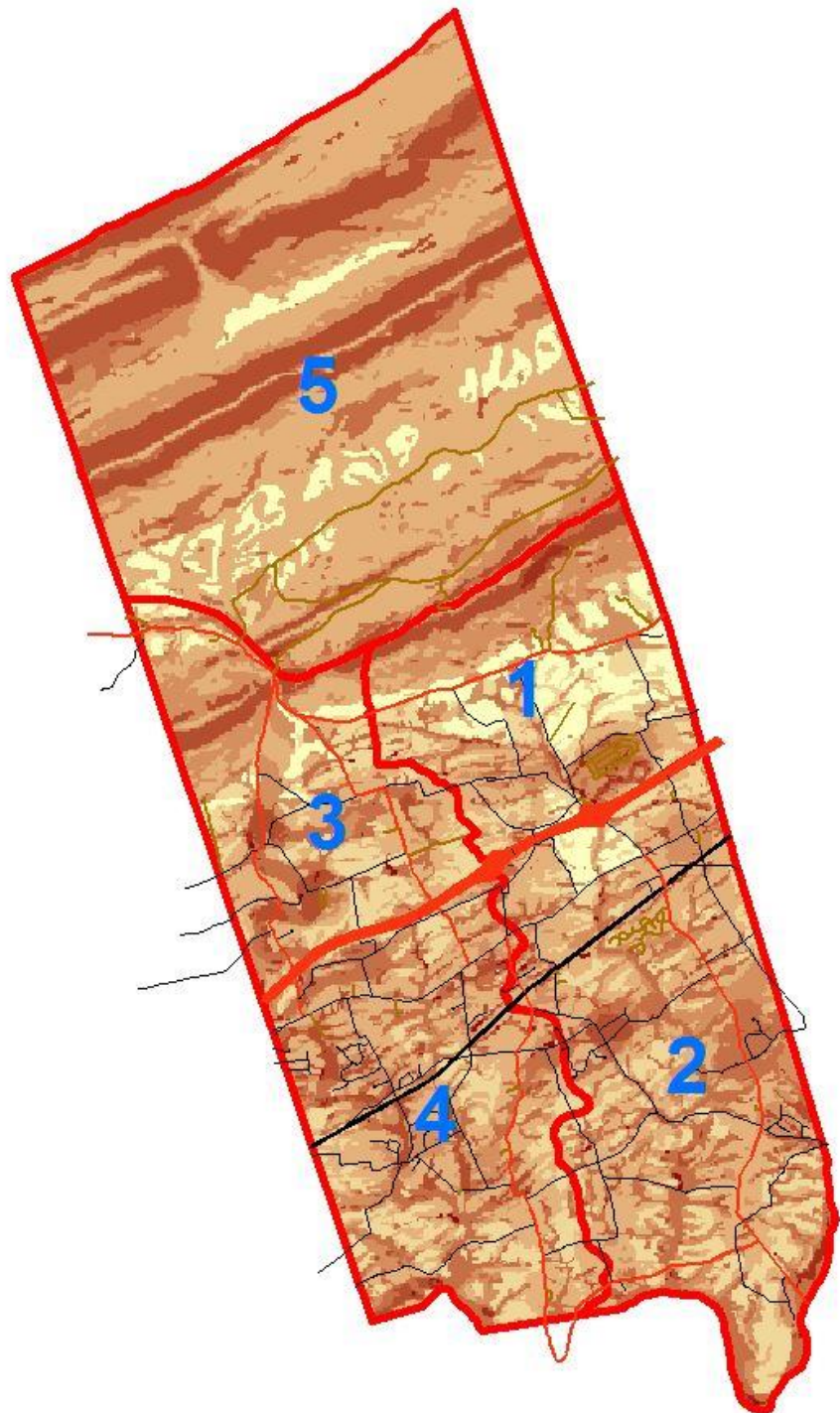


Study Areas

- Based on Geographic barriers to sewage flow
 - Manada Creek Watershed
 - Bow Creek Watershed
 - Interstate 81 (Limited crossings)

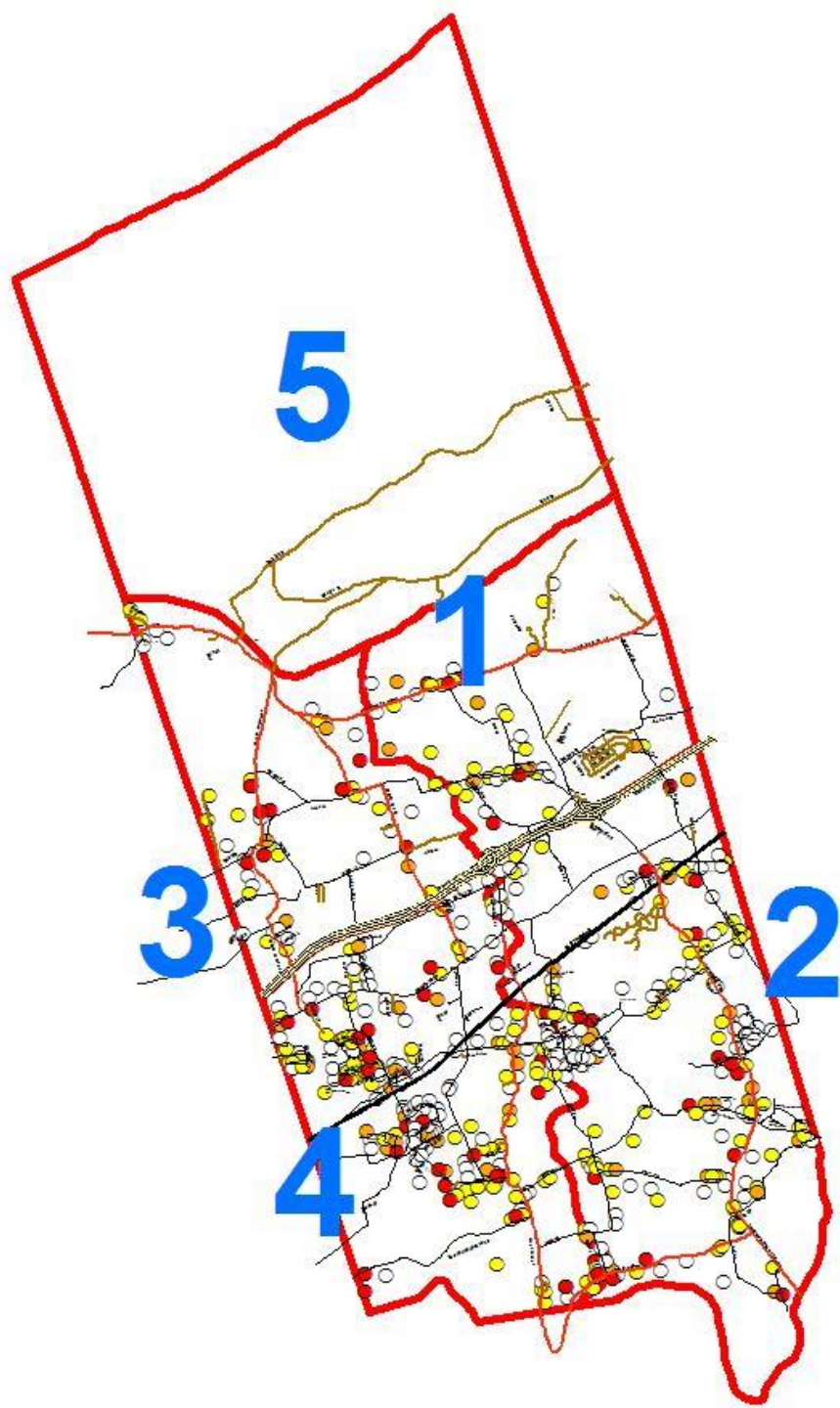
OLDS Suitability Analysis

- Data Used in the Study
 - NRCS – Soil Suitability
 - Sand Mound and Trench Systems
 - Slopes (Moderate and Steep)
 - Building Density (per acre)
 - Zoning (Lot Sizes)
 - FEMA 100-Year Floodplains
 - National Wetlands Inventory
 - Water Bodies
- Categorization and Ranking
- Overlay Analysis



OLDS Suitability

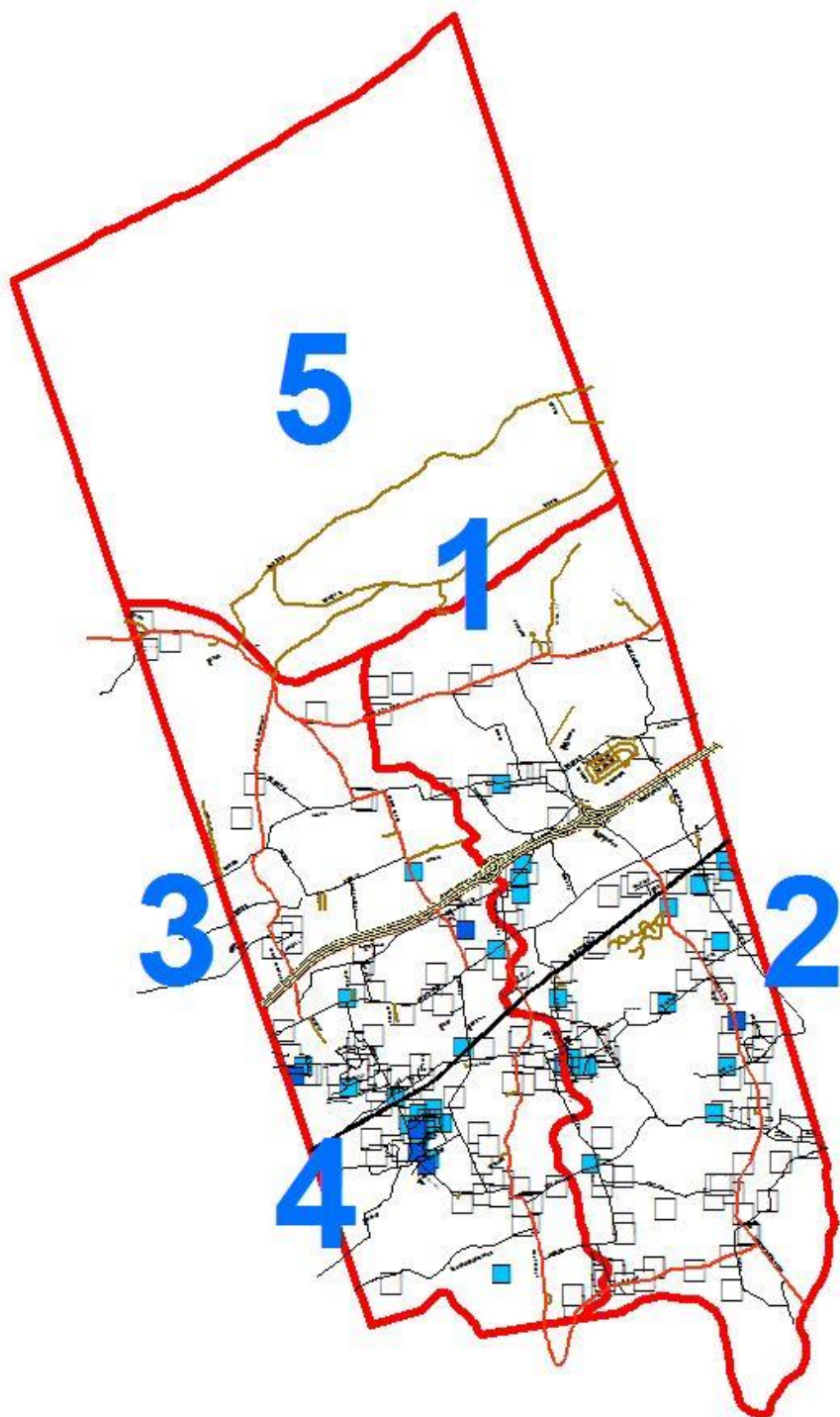
- Study Area 1
 - Slope & Wetland Issues
 - Most Suitable Areas
- Study Area 2
 - Low – Moderate Suitability
 - Least Restricted Conditions
- Study Area 3
 - Most Restricted Conditions
- Study Area 4
 - Most Development in near restricted areas
 - Soil Suitability low in Problem Areas



OLDS Malfunctions

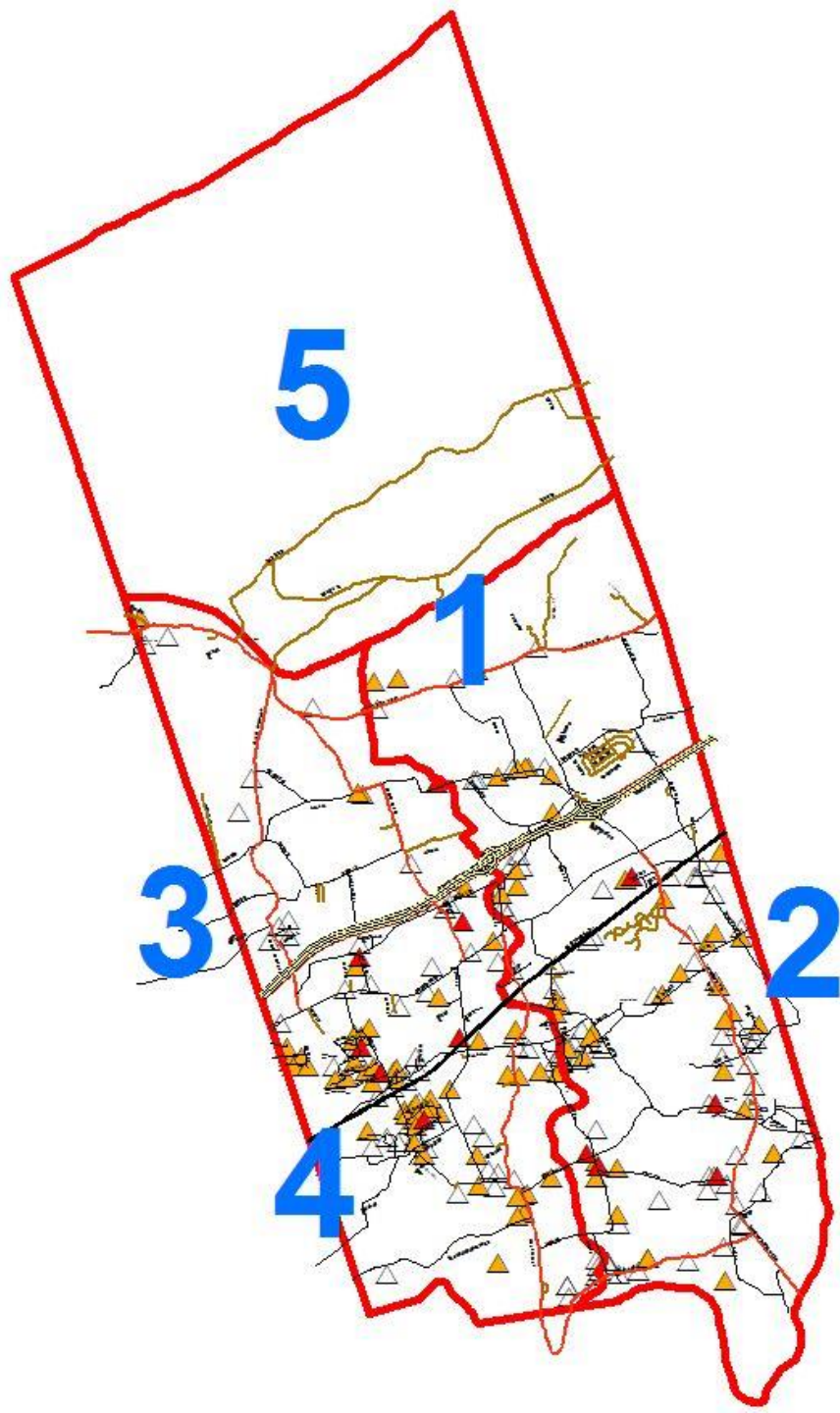
- 570 OLDS Examined
- 43% No Malfunction
- 13% Suspected¹ Malfunction
- 34% Potential¹ Malfunction
- 10% Confirmed¹ Malfunction
- **57% OLDS Malfunction Rate**

¹Definitions from DEP "Act 537 Sewage Disposal Needs Identification" book



Nitrate Levels

- 239 Wells Sampled
- 5% No Nitrates
- 76% 1 - 4.9 ppm
- 16% 5 – 9.9 ppm
- 3% ≥ 10 ppm
- **19% Above Acceptable Levels**

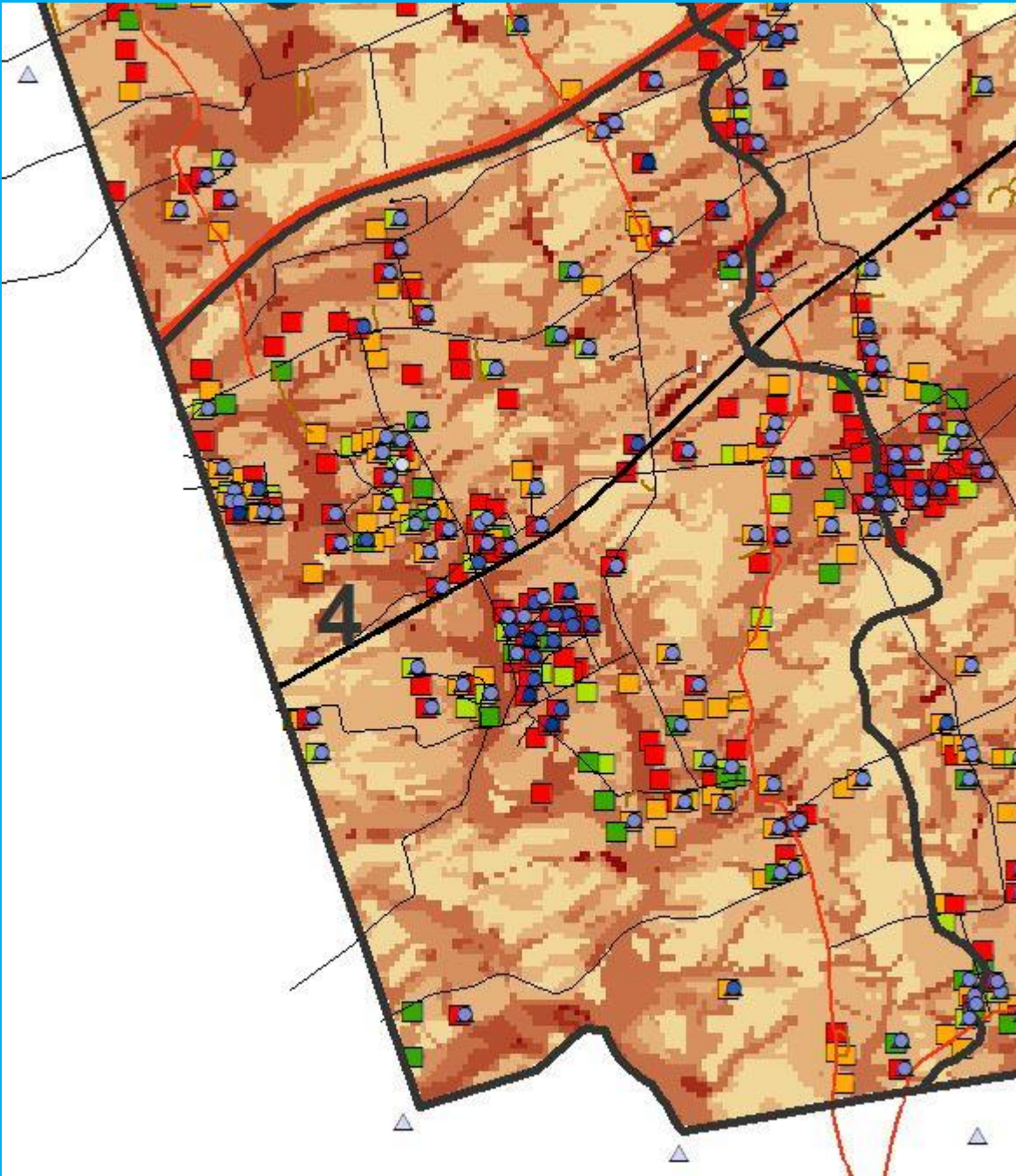


Coliform Presence

- 239 Wells Sampled
- 56 % No Coliform
- 44% Coliform Present
- 5% with Fecal Coliform

Study Area 4 Needed Analysis

- OLDS Suitability
- Nitrate Contamination
- Coliform Contamination
- OLDS Malfunctions



Goals of the Plan

- Develop a comprehensive sewage data set that can be used as a basis for planning.
- Identify areas that require sewer and remedies for the largest problems.
- Insure no new source of nutrient loading is created by this plan
- Dedicate existing reserve capacity at the Dairy Lane Wastewater Treatment Plant (WWTP) to serve existing residents with sewer needs.
- Create an administrative body to oversee the implementation of the plan.
- Identify and install ordinances necessary to further regulate individual sewage facilities.
- Derive a long-term implementation schedule based upon the financial capabilities of the Township and its residents.

Alternatives

- A review of certain types of alternatives is required by PADEP
- Infrastructure (Technical) Alternatives
 - Expansion of Existing System Capacity
 - Extension of Service to Problem Areas
 - New Treatment Technology
 - Inter-municipal Extension of Service
- Administrative Alternatives
 - Modification of Existing Ordinances
 - Drafting of New Ordinances
 - Management Programs
 - Inter-municipal Agreements

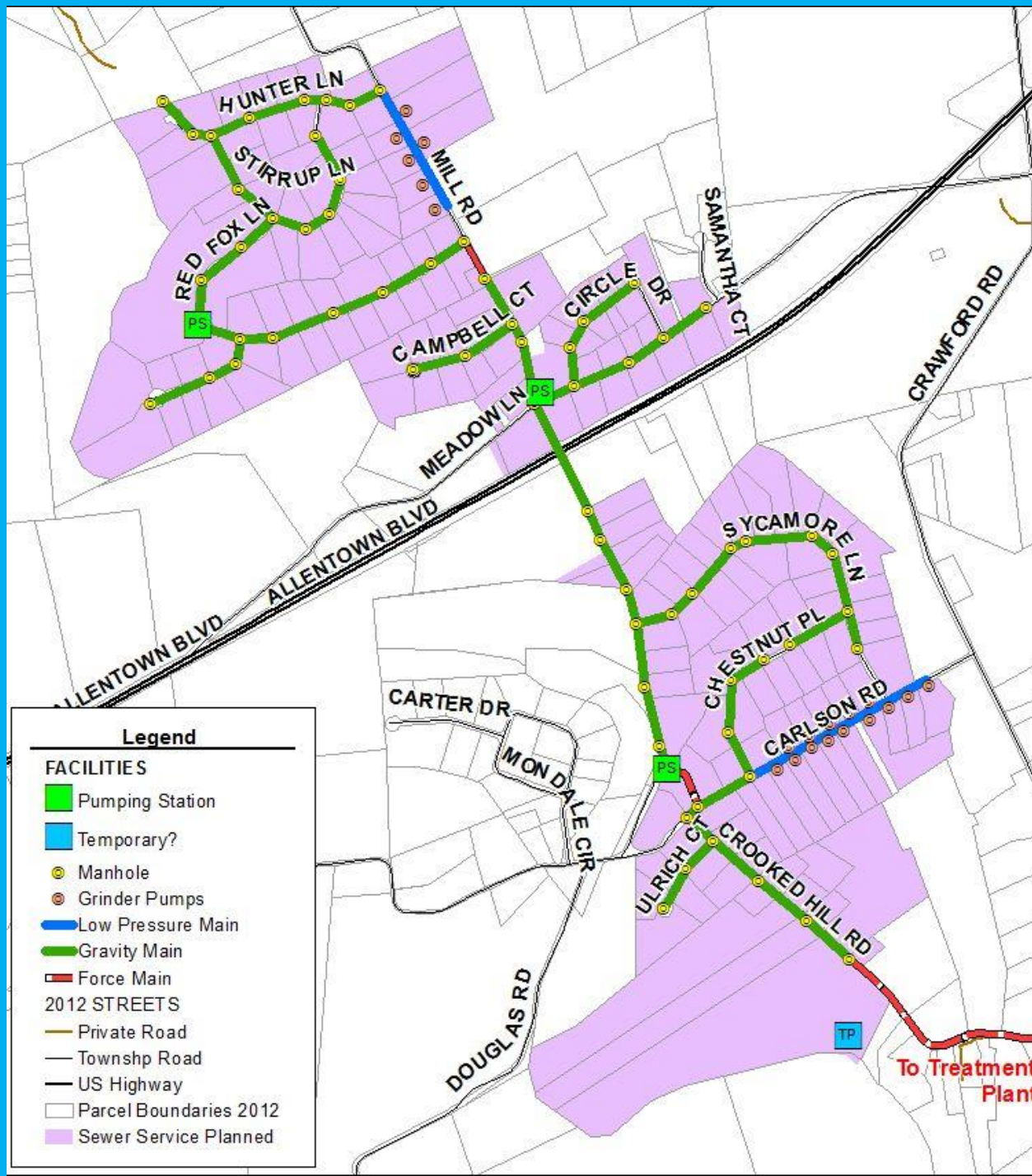
Alternative Process

- Identify Potential Alternatives
- Engineer Analyzes Alternatives for
 - Financial Feasibility
 - Environmental Compliance
- Present Alternatives to Board of Supervisors
- Board of Supervisors Selects Alternatives

Selected Alternatives (Technical)

Option	Alternative Description	Estimated Cost
2.A	Connect properties along Dairy Lane as part of the Englewood Sewer Project Completed	\$16,850
2E	Extend proposed Partridge Hills Sewer system to Pheasant Road Completed	\$900,000
4F	Connect properties along Hunter Ln., Red Fox Ln., Mill Rd., Campbell Ct., Circle Dr., Sycamore Ln., Chestnut Pl., Carlson Rd., and Crooked Hill Rd. via PS to Dairy Lane WWTP	\$8,960,000

Alternative 4.F – Study Area 4



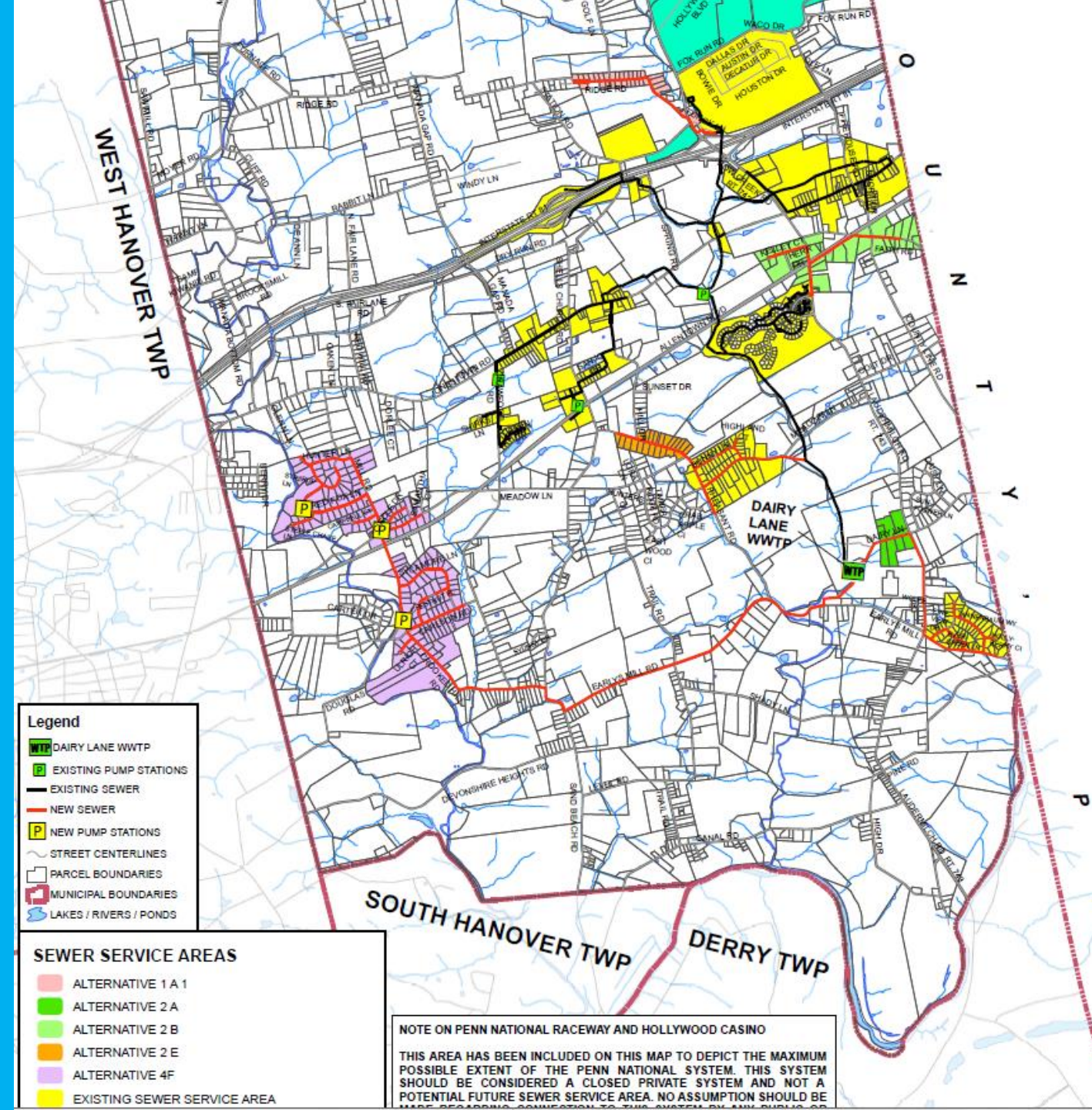
Selected Alternatives (Administrative)

- The Formation of an Authority
- Evaluate / Modify / Create Ordinances:
 - OLDS Management Program
 - SFSTF Ordinance
 - Subdivision and Land Development Ordinance (SALDO)
 - Zoning Ordinance
- Development of a Local Comprehensive Plan

Course of Action (Implementation Schedule)

MAJOR MILESTONES	Date
Connect the Dairy Lane Properties to the Sewer System (Alt. 2.A)	3 months after plan approval from PA DEP
Start Design for the Pheasant Road Sewer Extension (Alt. 2.E)	3 months after plan approval from PA DEP
Create SFSTF Ordinance	6 months after plan approval from PA DEP
Complete Design and Permitting for the Pheasant Road Sewer Extension (Alt. 2.E)	12 months after plan approval from PA DEP
Create the East Hanover Township Municipal Authority	18 months after plan approval from PA DEP
Bid the Pheasant Road Extension (Alt 2.E)	2 Months after receipt of WQM Permit
Complete Construction of the Pheasant Road Sewer Extension (Alt. 2.E)	16 months after receipt of the WQM permit
Start Design of the Study Area 4 Sewer Extension	7 years after plan approval from PA DEP
Complete Design and Permitting of the Area 4 Sewer Extension (Alt. 4.F)	8 years 6 months from plan approval from PA DEP
Bid the Study Area 4 Sewer Extension (Alt. 4.F)	2 Months after receipt of the WQM Permit
Complete Construction of the Study Area 4 Sewer Extension (Alt. 4.F)	26 Months after the receipt of the WQM permit

3.18 Future Service Areas



Cost Estimate Details

Area 4- Sycamore Ln, Chestnut Pl, Carlson Rd, Hunter Lane, Mill Rd, Red Fox Ln, Campbell Ct & Circle Dr to south

Item	Description	Quantity	Unit	Unit Price	Extended Price
1	Bonds and Insurance	1	Lump Sum	\$15,000	\$15,000
2	Mobilization and Demobilization	1	Lump Sum	\$12,000	\$12,000
3	Furnish and Install 8" SDR-35 Sewer Line in Township Roadway and shoulder (10-14' depth)	20500	LF	\$95	\$1,947,500
4	Sewer Manholes	69	EA	\$5,000	\$345,000
5	Furnish and Install 1 1/2" LPFM (including wyes)	2100	LF	\$35	\$73,500
6	Furnish and Install 6" SDR-35 Sewer laterals, all depths	6050	LF	\$50	\$302,500
7	Furnish and install 8" x 6" Wye fittings for house laterals	180	EA	\$55	\$9,900
8	Grinder Pump System, including connection of electrical hook-ups and alarms	20	EA	\$8,200	\$164,000
9	Install Pump Station	2	LS	\$120,000	\$240,000
10	Furnish and Install 4" Force Main	2200	LF	\$60	\$132,000
11	Landscaping Allowance, to be used as directed by Engineer for new trees	1	Allowance	\$25,000	\$25,000
12	Permanent Roadway (paved and/or gravel) and Shoulder restoration, mains and laterals (not including 1 1/2" wearing course)(temporary restoration incidental)	24800	LF	\$21	\$520,800
13	Easement Restoration, mains and laterals (not including 1 1/2" wearing course)(temporary restoration incidental)	4500	LF	\$5	\$22,500
14	Permanent Roadway 1 1/2" wearing course	29550	SY	\$8	\$236,400
15	Inspection and Testing Allowance	1	Allowance	\$20,000	\$20,000
SUBTOTAL =				\$4,066,000	
Engineering/Admin/Legal/ROW (25%) =				\$1,016,500	
CONTINGENCY (25%) =				\$1,016,500	
TOTAL ESTIMATE =				\$6,100,000	

To Treatment
Plant

Area 4 - Forcemain to Dairy Lane WWTP

Item	Description	Quantity	Unit	Unit Price	Extended Price
1	Install Air Release Valves	6	LS	\$10,000	\$60,000
2	Install Pump Station	1	LS	\$200,000	\$200,000
3	Furnish and Install 4" Force Main	14800	LF	\$75	\$1,110,000
4	Stream Crossings (quantity measured by length of concrete encasement)	300	LF	\$200	\$60,000
5	Landscaping Allowance, to be used as directed by Engineer for new trees	1	Allowance	\$15,000	\$15,000
6	Permanent Roadway (paved and/or gravel) and Shoulder restoration, mains and laterals (not including 1 1/2" wearing course)(temporary restoration incidental)	13000	LF	\$22	\$286,000
7	Easement Restoration, mains and laterals (not including 1 1/2" wearing course)(temporary restoration incidental)	1800	LF	\$7	\$12,600
8	Permanent Roadway 1 1/2" wearing course	17333	SY	\$8	\$138,664
9	Inspection and Testing Allowance	1	Allowance	\$20,000	\$20,000
SUBTOTAL =				\$1,902,000	
Engineering/Admin/Legal/ROW (25%) =				\$475,500	
CONTINGENCY (25%) =				\$475,500	
TOTAL ESTIMATE =				\$2,860,000	

537 Plan Economic Analysis

EDU's	Estimated Cost	Current Tapping Fee/EDU	Tapping Fee Generated Revenue	Estimated Yearly Operating Costs
180	\$8,960,000	\$3,484	\$627,120	\$50,040

Future Project Cost	Future Reserve Balance	Projected Cost less Tapping Fee & Reserve Balance	Future Sewer Rate	Future Sewer Revenue
\$11,469,558	\$2,914,891	\$7,751,900	\$1,224	\$1,359,998

Future Operating Cost	Existing Debt Service	Remaining Future Revenue	Project 20-year Debt Service	Revenue Remaining
\$395,189	\$358,728	\$606,081	\$595,936	\$10,145

NOTE: Financing based on a term of 20-years at a rate of 4%

Assumed Sewer Rate Increase 6.7%/year for 10-years

Assumed Investment Rate of Return: 3.5%

Act 537 Plan RATES

Year	Rate
2011	\$700
2012	\$747
2013	\$797
2014	\$850
2015	\$907
2016	\$968
2017	\$1,033
2018	\$1,102
2019	\$1,176
2020	\$1,255
<i>Increasing 6.7%/year</i>	

Current Rate
\$700/year or
\$175/quarter
(\$58.34/month)

Supervisors have been
contributing \$500,000 gaming
funds each year to pay down
sewer debt

Fall 2015 financial projection
required \$780/year to avoid deficit.

Draft Communication Plan

Item	Purpose	Timeline
Introduction Letter	Introduce project, include map flyer, and verify addresses.	Late 2015
Formal Notice	Letter with formal notice.	Spring 2016
Budgeting General Costs letter	Project costs TBD. Start planning your family budget. The most recent extensions required a \$ hook-up fee. Homeowners spent an average of \$ connecting from house to their stub. Current tap fee is \$. Current quarterly costs are \$.	Late fall 2016
Who Does What, When letter	Let them know EHT has found the need (537 Plan), EHTMA will design & construct mains, place lateral stub at their property. When complete, they will be responsible to connect to the stub. Specific timeline TBD	Summer 2017
Where are we at with the design letter	Status letter	Spring 2018
Where are we at with budgeting letter	Status letter	Fall 2018
What to expect	Lot specific information	Fall 2019
There has to be something...		

Questions?

<http://easthanoverwpdcpa.org/index.php/boards-and-committees/municipal-authority>