



PROJECT PRIORITY RATING SYSTEM GUIDANCE MANUAL



April 2008

INTRODUCTION

BACKGROUND

The Clean Water Act authorized the expenditure of funds for the Clean Water State Revolving Loan Fund. This fund is to be used for the financing of wastewater infrastructure construction, upgrade, remediation and repair projects. One of the requirements to receive this funding is for the states to develop and implement a project priority ranking system that takes into consideration the protection of public health and the environment.

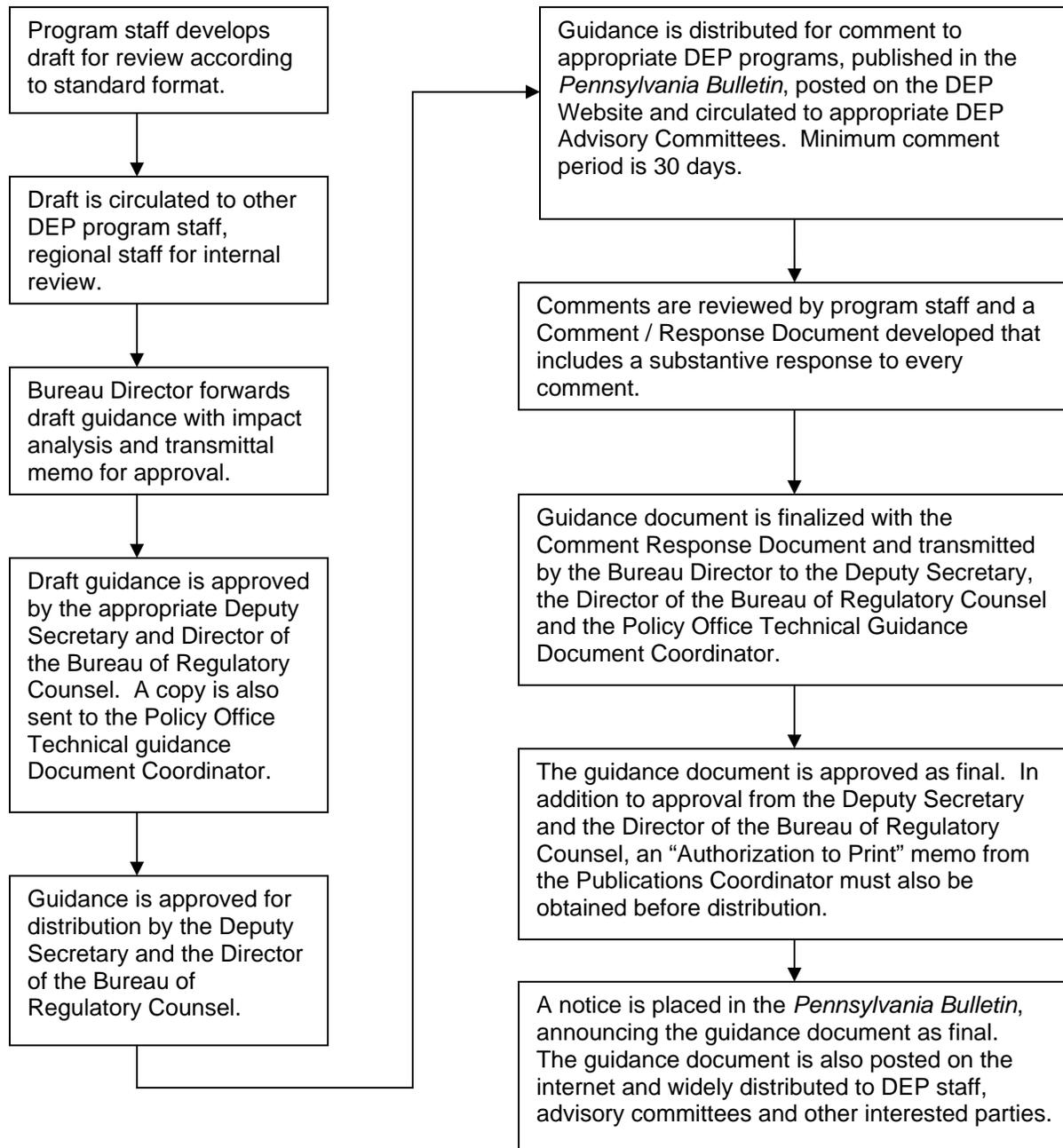
In 1988, the Pennsylvania Infrastructure Investment Authority (PENNVEST) was created. Through this program state funding was added to the Clean Water State Revolving Loan Fund. Regulations promulgated under this authorizing statute by PENNVEST also require the creation of a project ranking system to facilitate the selection of projects for funding.

The following ranking system is designed to meet both sets of requirements. Additional revisions to this ranking framework must be approved by PENNVEST and the US Environmental Protection Agency in order to meet established federal and state statutory requirements. In addition, any revisions must go through a public participation process defined by Department of Environmental Protection (DEP) policy for the development and implementation of program guidance. This process is defined below.

PROCESS FOR REVISION OF RATING SYSTEM

In order to meet requirements for public participation and to insure consistency with federal and state requirements, the DEP guidance development process must be followed whenever any changes are proposed. Figure 1 is a summary of this process. In addition, any changes must be reviewed and approved by the US Environmental Protection Agency before implementation.

Figure1 – Technical Guidance Development Process



RATING FACTORS FOR ELIGIBLE WASTEWATER SYSTEM PROJECTS

The current framework, as described in this document, combines environmental factors and rankings established by DEP with policy factors established by PENNVEST to reflect current administrative policy. The addition of these factors to the final score is only considered for the use of state monies, since federal criteria don't allow for the consideration of some of the PENNVEST factors.

DEP program staff review and score projects that are ready for funding, meaning all the necessary permits for proceeding with the project have been issued. The following framework is used to complete this ranking process. This process is done one month before the next PENNVEST Board meeting. Once all the individual scores are completed, program staff meets and discusses each project score and comes to a consensus on the final score for each project. Based on the results of this effort, DEP submits a final list of recommended projects and scores to PENNVEST for consideration. PENNVEST then considers the additional factors listed below for projects intended for state funding and develops a final list of recommended projects for PENNVEST Board consideration. The PENNVEST Board then reviews the applications and recommendations from PENNVEST and approves the list of projects selected for funding.

DEP PRIORITY RATING FACTORS

(a) Priority among eligible projects shall be established according to the applicant's accumulation of points for each of the following factors. The maximum points for each factor are also indicated.

- (1) Public Health – 32 points
- (2) Aquatic Health – 20 points (plus possible 8 bonus points)
- (3) Infrastructure Health – 24 points
- (4) Compliance – 20 points
- (5) Community Health – 5 points

(b) A project's total priority points shall be the sum of the points assigned in each of the individual rating factors. Total possible points from DEP are 109. See below for a detailed description of each rating factor.

(c) DEP staff will use the Project Rating Form, number **xxx** to summarize the results of their evaluation.

PENNVEST ADDITIONAL RATING FACTORS

To develop a final score for each project, PENNVEST adds the following points to the project scores DEP develops. The total points that can be added to DEP's rating for each project are 70 points.

(a) **Economic Development** – The Department of Community and Economic Development (DCED) provides this ranking based on:

- (1) High (20 points) – The project has a direct link to job creation or preservation and private investment.
- (2) Medium (15 points) – An indirect link to job creation or preservation and private investment exists.
- (3) Low (5 points) – Project implementation.

(b) **Distressed Community** – DCED evaluates communities across the Commonwealth for financial well-being. Communities on the Distressed Communities list are identified in order to have access for consideration for assistance from various state agencies in order to get the communities back to normal status. If the project is in a community that is considered distressed, 10 points are added to the project.

(c) **Infill** – PENNVEST adds 10 points to those projects that serve a city, borough or township of the first class. Redevelopment of existing population centers is a priority.

(d) **Brownfield** – PENNVEST adds 15 points to those projects that serve a designated Brownfield site as identified by DEP.

(e) **Community Action Team (CAT) Projects** – DCED adds 10 points to those projects that are in a CAT community. The CAT community system is an effort to focus financial and technical resources to specific communities identified by the CAT Team. Members of the CAT Team include DCED, DEP, the Pennsylvania Department of Transportation, the Public Utility Commission and other local and state agencies.

(f) **Comprehensive Planning** – DCED adds 5 points to those projects that are within communities with a comprehensive plan, where the community plan is consistent with the adopted county comprehensive plan.

DEFINITIONS OF TERMS

For the purpose of this rating system, the following terms are defined as follows:

- (a) Cesspool – a pit for disposal without any type of leach bed or field.
- (b) Combined Sewer Overflows (CSOs) – Intermittent overflows, or other untreated discharges from a municipal combined sewer system (including domestic, industrial and commercial wastewater and stormwater) which result from flows in excess of the dry weather carrying capacity of the system.
- (c) Energy Efficiency Projects – These projects improve the ratio of useful work (energy) out of a system divided by work put into a system. Engineering judgment is required for viability.
- (d) Financial Capability (Capacity) - The ability of a system to acquire and manage sufficient financial resources to achieve and maintain regulatory compliance.
- (e) Groundwater Contamination (nitrates) – Water below the land surface in a zone of saturation with nitrate (as nitrogen) concentration greater than 10 milligrams per liter.
- (f) Hydraulic Overload – The condition that occurs when the monthly average flow entering a plant exceeds the hydraulic design capacity for 3-consecutive months out of the preceding 12 months or when the flow in a portion of the sewer system exceeds its hydraulic carrying capacity.
 - (1) Dry Weather Flow - The base flow or surface discharge from an area or treatment facility which occurs immediately prior to a precipitation event and which resumes 24 hours after the precipitation event ends.
 - (2) Wet Weather Flow – The flow or surface discharge from an area or treatment facility that is not dry weather flow.
- (g) Infrastructure Sustainability – An approach that combines consideration of system management practices, full cost pricing and efficient use of water resources within a watershed approach to insure present and future wastewater system infrastructure needs are met while balancing the relationship between ecological integrity, economic prosperity and social equity.
- (h) Managerial Capability (Capacity) - The ability of a system to effectively manage and operate the system as indicated by whether or not they have a certified operator, an emergency response plan and/or an operation and maintenance plan.
- (i) NPDES Violation - Lack of intention or ability to comply with the National Pollutant Discharge Elimination System permit – the national system for the issuance of permits

under section 402 of the Federal Clean Water Act (33 U.S.C.A. § 1342) including a state or interstate program which has been approved in whole or in part by the EPA.

- (j) Nutrient Reduction Directive – A Department policy to reduce nitrogen or phosphorus from a discharge source.
- (k) Organic Overload - The condition that occurs when the average daily organic load exceeds the organic design capacity upon which the permit and the plant design are based. The average daily organic load is ??? as defined in Chapter 94.
- (l) Private or Public Well – A well used as a potable water supply.
- (m) Proactive Asset Management – Preventing a crisis through maintaining or improving the resources, rights and properties owned by an entity.
- (n) Public Sources – Any system that serves two or more users.
- (o) Sanitary Sewer Overflows (SSOs) – Intermittent overflows of wastewater, or other untreated discharges from a separate sanitary sewer system (which is not a combined sewer system), which result from flows in excess of the carrying capacity of the system or from some other cause prior to reaching the headworks of the plant.
- (p) Section 303(d) List – State waterbodies outlined in the Clean Water Act that remain polluted after the application of technology-based controls.
- (q) Substandard On-Lot System - An individual sewage system not meeting design standards or possessing a permit and composed of a system of piping, tanks or other facilities for collecting, treating and disposing of sewage.
- (r) Technical Capability (Capacity) - The physical and operational ability of a water system to meet regulatory requirements.
- (s) Wildcat Sewer – Collection systems (community sewers) serving more than one equivalent dwelling unit (EDU) and discharging untreated or partially treated sewage to the surface of the ground, storm sewers or other waters of the Commonwealth.

DEFINITION OF DEP RATING FACTORS**PUBLIC HEALTH**

(a) The number of points for public health shall be based on the extent to which project implementation will eliminate detrimental effects of public health hazards from existing discharges of untreated or inadequately treated sewage.

(b) The following point values shall be used to determine rating points for this factor. (Use Tables 1, 1a and 2 in assigning points.)

Category A - 20 Points Maximum – This category includes:

1. Documented evidence exists or a technical evaluation was conducted or approved by the Department confirming that more than 50% of the on-lot disposal systems in the rated area are confirmed malfunctions. See Notes 1, 2 and 3 in paragraph (c).
2. Documented evidence in the project area of untreated or inadequately treated sewage discharged from collection and conveyance facilities during dry weather. See Note 5 under paragraph (c).
NOTE: Problems associated with treatment plants are **not** to be considered in Category A. See Notes 8, 9 and 10 under paragraph (c).

Category B - 12 Points Maximum – This category includes:

1. Documented evidence exists or a technical evaluation was conducted or approved by the Department confirming that more than 25% but less than or equal to 50% of the on-lot disposal systems in the rated area are confirmed malfunctions. See Notes 1, 2 and 3 in paragraph (c).
2. Documented evidence in the project area of intermittent discharges of untreated or inadequately treated sewage from collection and conveyance facilities during dry weather. See Note 5 under paragraph (c).
NOTE: Problems associated with treatment plants are not to be considered in Category B. See Notes 8, 9 and 10 under paragraph (c).

Category C - 6 Points Maximum – This category includes:

1. Documented evidence exists or a technical evaluation was conducted or approved by the Department confirming that more than 10% but less than or equal to 25% of the on-lot disposal systems in the rated area are confirmed malfunctions. See Notes 1, 2 and 3 in paragraph (c).
2. Cesspools -- Documented evidence must exist to show that 50% of the systems in the area are cesspools.
3. Visual evidence in the project area of discharges of untreated or inadequately treated sewage from collection and conveyance facilities primarily in wet-weather. See Notes 5 and 6 under paragraph (c).

4. Projects proposing an upgrade to the treatment facility as a result of the issuance of more stringent effluent limits in a revised and issued NPDES permit. See Notes 8, 9 and 10 under paragraph (c).
5. Combined Sewer Overflow (CSO) needs where a Department Order is issued and Construction, not Operations and Maintenance, is required for correction. See Note 7 under paragraph (c).
6. CSO projects proposing construction activities to facilitate compliance with the Part C Conditions relating to CSO management controls found in an applicable Permit. See Note 7 under paragraph (c).
7. Projects proposing an upgrade to a wastewater treatment facility required by the issuance of more stringent effluent limits for TSS, (C)BOD₅, Ammonia-Nitrogen or Phosphorus in a revised AND issued NPDES Permit.

Category D - 3 Points Maximum - This category includes:

1. ALL other collection system rating scenarios NOT covered in sub-categories A, B, or C.
2. Discharges of sewage receiving at least secondary treatment but less than NPDES requirements prior to discharge. See Notes 8, 9 and 10 under paragraph (c).

Category E - 0 Points - Present wastewater treatment facilities are adequate or there is a lack of adequate documentation to award priority rating points in Categories A through D.

(c) In calculating the points for public health and the use of Tables 1, 1a and 1b the following notes need to be considered: (Table 1, and 1a are cumulative. Use Table 1 to capture the initial impact on public health from existing discharges of untreated or inadequately treated sewage. Then use Table 1a to capture any additional impact from these discharges on sources of drinking water.)

NOTE 1 - Documentation used to award points under this subcategory should be obtained and presented in accordance with the guidelines presented in the Department's *Sewage Disposal Needs Identification Guidance Manual, March 1996*.

NOTE 2 - On-lot disposal systems that do not meet current Departmental Regulations or Standards are not to be considered malfunctions by definition. A cesspool does not need to be a confirmed malfunction as defined in the Department's *Sewage Disposal Needs Identification Guidance Manual, March, 1996*. However, a Best Technical Guidance Repair Permit, issued for an on-lot wastewater disposal system is considered a confirmed malfunction.

NOTE 3 - If private well water contamination is caused by on-lot systems malfunctioning to groundwater supplies, the following explanation applies:

Situation:

1. Soils and/or geological conditions for the area are known to be conducive to groundwater contamination by the type of sewage disposal systems currently in use. This contamination could be due to either nitrates or total or fecal coliform.
2. On-lot disposal systems are the primary means of sewage disposal in the area.
3. Private wells or a public well in the area and in the problem soil zone are the primary water supply for the area.

Documentation:

Well water contamination is demonstrated by a combination of the following types of supporting data:

1. Community Survey Reports
2. Private Sample Results
3. Knowledge of physical conditions and locations of sewage disposal systems and water supply systems
4. History of waterborne health problems

Rating Solution:

See Table 1a, Domestic Water Supply, Public Health

Rationale:

A consensus was reached for assigning points through Table 1a, if in our professional judgment, subsurface malfunctions are indeed the likely source of groundwater pollution and that the problem is generalized. The resulting point structure comparing surface and subsurface malfunctioning problems impacting water supplies is more equitable. Also, the more serious problem of surface malfunctions and contaminated water supplies still has the potential for a higher rating.

NOTE 4 - Points awarded under Category D for malfunctioning on-lot systems have been dropped. The rationale for this is as follows:

1. There is too great a potential for municipalities to abuse this type of need and get an easy 3 Points. (i.e. It is certain that in any area you can find one malfunctioning system which is less than 10% of the systems in the project area.)
2. A small number of malfunctioning systems is not as serious as a secondary treatment facility in need of an upgrade.

NOTE 5 - This category includes the awarding of priority rating points for a project with hydraulic overloading which results in sewage backing up into the basements of structures. A project can qualify for a maximum of 6 Points, under Category C of the Public Health Factor, when the sewage backups are supported by documentation. Valid types of documentation are Chapter 94 Reports, evidence of public outcry, newspaper articles, or evidence that shows field staff has verified that the backup problem(s) has occurred.

NOTE 6 - The correction to a collection or conveyance system must be of a construction nature and not operation/maintenance. If the problem is of an operation and maintenance nature, it should not be rated. Rating points may only be awarded under this subcategory when collection/conveyance system deficiencies cause improper discharges to the ground surface, etc., due to structural deficiencies.

NOTE 7 - Combined Sewer Overflow (CSO) projects must propose construction activities that will lessen the impact of the affected CSO's on the receiving watercourse. The project (correction) must be of a construction nature and not just operation/maintenance. Point values in Category C can be assigned for CSO projects as specified in Table 1, since DEP and other regulatory agencies have identified CSO impacts an "environmental priority."

NOTE 8 - For PENNVEST Priority Rating purposes, an existing secondary wastewater treatment facility is considered to be providing > or = to secondary treatment.

NOTE 9 - Treatment needs in the Public Health Category have been interpreted differently by various regions. Less than secondary treatment in Categories B and C refers to treatment facilities that are permitted with a degree of treatment less than secondary (Ex.-Primary Treatment), **NOT** secondary facilities that are not meeting effluent criteria due to I/I problems or other forms of mismanagement. Existing secondary facilities not maintaining secondary treatment would receive points under Category D only. Our rationale is that it is only fair that primary plants be given higher priority than mismanaged secondary plants. Another associated problem is how to rate primary plants that discharge to acid mine drainage impacted stream segments. There is no specific place for this need in the Priority Rating System. Therefore, a consensus was reached to include these types of needs in Category C of the Public Health Rating Factor.

NOTE 10 - In conjunction with the information in NOTE 9, the issue of selecting a category in the Public Health Rating Factor, for projects proposing a treatment facility upgrade, due to the facility's inability to meet its NPDES effluent requirements, was resolved. These types of projects will be eligible for a maximum of 3 Points under Category D.

NOTE 11 - **PUBLIC BATHING** – When considering issues of public bathing use the following point categories in combination with Table 1c. Information on popular "swimming holes" (unpermitted beaches) will be considered on a case-by-case basis.

5 Points - A downstream, permitted public bathing beach has been closed due to contamination as a result of water quality standards violations due to discharges of untreated or inadequately treated sewage which would be eliminated or upgraded by project implementation.

3 Points - A downstream, permitted public bathing beach is shown, through water quality analysis and an evaluation of stream and bathing area's physical

characteristics, to be subject to contamination by untreated or inadequately treated sewage discharges which would be eliminated or upgraded by implementation.

1 Point - A public bathing place permit has been denied because of violations of water quality standards resulting from discharges of untreated or inadequately treated sewage which would be eliminated or upgraded by project implementation.

0 Points - No downstream public bathing uses are documented or there is no documented effect of discharges of untreated or inadequately treated sewage on downstream public bathing uses which would be eliminated or upgraded by project implementation.

TABLE 1c

PUBLIC BATHING RATING

	<u>5 POINTS</u>	<u>3 POINTS</u>	<u>1 POINT</u>	<u>0 POINTS</u>
DOCUMENTATION (See Note 11 in paragraph (c))	Public Bathing Beach Closed Due to Water Quality Standards Violations	Chemical & Physical Analysis Indicate Potential Contamination	Permit Denied Due to Water Quality Standards Violations	No Use or Effect

TABLE 1 -- PUBLIC HEALTH RATING

RATING CATEGORY

DISPOSAL SYSTEM

	A (20 points)	B (12 points)	C (6 points)	D (3 points)	E (0 points)
ON-LOT See Note 1, 2 & 3 under paragraph (c)	>50% of systems are confirmed malfunctions.	> 25% and <or= 50% of systems are confirmed malfunctions.	>or=10% and <or= 25% of systems are confirmed malfunctions. Cesspools (>50% is confirmed). See Item 2 under Category C above.	< 10% of systems are confirmed malfunctions. See Note 4 under paragraph (c).	Systems are adequate.
COLLECTION & CONVEYANCE	Raw sewage is discharging on public property during dry weather. See Note 5 under paragraph (c).	Raw sewage intermittently discharging on remote or public property in dry weather. See Note 5 under paragraph (c).	Evidence of raw sewage discharging during wet weather. See Notes 5 & 6 under paragraph (c). CSO's where department order is issued & <u>construction</u> , (NOT O&M) is required for correction. See Note 7 under paragraph (c). CSO <u>construction</u> project (NOT O&M) proposed to facilitate compliance with the Part C conditions relating to CSO management controls found in an applicable permit. See Note 7 under paragraph (c).	This category includes <u>all</u> other collection system rating scenarios <u>not</u> covered in categories A, B, C or E.	Collection system is adequate.
TREATMENT FACILITY See Notes 8, 9 and 10 under paragraph (c).	Category A is not applicable to treatment facilities.	Category B is not applicable to treatment facilities.	Projects proposing an upgrade to the treatment facility required by the issuance of more stringent effluent limits [tss, (c)bod ₅ , ammonia-nitrogen or phosphorus] in a revised <u>and</u> issued NPDES permit.	Treatment > or = to secondary, but < NPDES requirements	Treatment facility is adequate

TABLE 1a – DOMESTIC WATER SUPPLY
Public Health

	<u>A (12 POINTS)</u>	<u>B (6 POINTS)</u>	<u>C (3 POINTS)</u>	<u>D (0 POINTS)</u>
PRIVATE WELLS See Note 3 in paragraph (c)	> 25% of “Representative Sample” contaminated	> 10% and <or= 25% of “Representative Sample” contaminated	>or= 5% AND <or= 10% of “Representative Sample” contaminated	< 5% of “Representative Sample” contaminated
PUBLIC SOURCES (Serving two or more users)	Water Supply Intake subject to water quality violations that occur frequently	Water Supply Intake subject to water quality standards violations that occur depending on critical source conditions (Q ₇₋₁₀ Low Stream Flow conditions)	Water Supply Intake subject to water quality standards violations that could occur depending on critical source conditions (Q ₇₋₁₀ Low Stream Flow conditions)	Water Supply Intake subject to water quality standards violations that are remote

Table 1b – DOMESTIC WATER SUPPLY RATING FOR MULTIPLE SOURCES WITHIN A NEEDS ANALYSIS AREA

		PERCENTAGE OF PROJECT POPULATION			
		0%	1% - 30 %	31% - 70%	71% - 100%
TYPE AND/OR DEGREE OF CONTAMINATION	> 25% of “Representative Sample” Contaminated OR Water Supply Intake Subject to Water Quality Standards Violations Which Occurs Frequently	0	5	10	15
	>10% AND <or=25% of “Representative Sample” Contaminated OR Water Supply Intake Subject to Water Quality Standards Violations Which Occur Depending on Critical Source Conditions (Q ₇₋₁₀ Low Stream Flow Conditions)	0	3	6	10
	>or= 5% AND <or= 10% of “Representative Sample” Contaminated OR Water Supply Intake Subject to Water Quality Standards Violations Which Could Occur Depending on Critical Source Conditions(Q ₇₋₁₀ Low Stream Flow Conditions)	0	1	3	5
	< 5% of “Representative Sample” Contaminated OR No Evidence of Contamination OR Water Supply Intake Subject to Water Quality Standards Violations Which Are Remote	0	0	0	0

(d) In using Table 1a and 1b, factor in the following:

NOTE 1 - When considering multiple sources of water supply within a needs analysis area, use Table 1b. Consider the following example:

If a very small percentage of an area has greater than 25% of their “representative sample” contaminated, the rating for the entire area would not be 12 points. The rating would be based on the population affected.

Example: Total Area - 200 Homes

- 188 Homes on Public Water Supply that are NOT contaminated
- 12 Homes with Private Wells Contaminated by Sewage

Therefore, 6% of the homes would be affected and 5 Points would be assigned.

NOTE 2 - If 6 or 12 Points are awarded for Domestic Water Supply, up to 6 points should also be awarded in accordance with Table 1 above for the Public Health Category. See NOTE 3 under paragraph (c) above.

NOTE 3 - **Clarification on the Use of Total and Fecal Coliform Testing for Well Contamination:**

Primary contamination indicator is total coliform where fecal coliform is also present in 20% of the samples testing positive for total coliform and/or evidence of contamination through dye testing.

Example: 25 wells out of 100 (25%) have positive readings of total coliform. 5 of the 25 wells (20%) also show fecal coliform. Therefore, 25% of the representative sample (which is the 100 well figure) is considered contaminated.

NOTE 4 - **A representative sample is defined as follows:**

A. New Surveys -

Up to 50 Homes (Wells) Approximately	50%
50 to 100 Homes (Wells) Approximately	35%
100 to 500 Homes (Wells) Approximately	25%
500 to 1,000 Homes (Wells) Approximately	20%
> 1,000 Homes (Wells) Approximately	15%

B. Existing Surveys - Surveys conducted or previously approved by the Department.

NOTE 5 - **Well Construction Considerations:**

It is important to know that wells are properly constructed and that the wells are not being contaminated by sources other than existing sewerage facilities. If the area being rated is served by on-lot disposal systems and water supplies are predominantly dug wells, we can generally disregard construction. If the area being rated is partially served by dug wells and these are the only wells contaminated, we should assess proper construction practices and the role they play in preventing contamination of groundwater supplies before awarding any priority rating points.

NOTE 6 - **Additional Fecal Coliform Testing Guidance:**

The testing of drinking water samples for the presence of fecal coliform bacteria may be carried out using several different established methods. The Colilert Test using Quantitray Technology is to be considered an adequate method for the testing of

drinking water samples **ONLY**. The Colilert Test may **NOT** be used for surface water sampling. The testing of surface waters should be done through the traditional plate count using the incubation or fermentation tube methods. Surface waters include streams, rivers, lakes, etc.

NOTE 7 – Discussion:

When determining a PENNVEST Rating for a project area that is served by more than one water supply type, previous guidance only discussed a situation where a “very small percentage” of the project area was affected. The logic of this example seems to be that if only a small area of the total project is affected, the data should be appropriately weighted and not ignored. The guidance does not address a situation when the affected water supply’s ratio approaches or exceeds 50% of the project area. It would stand to reason, that as the relative size of the affected area increases, the greater that area’s sewage needs should be weighted when determining a rating.

Solution:

Table 1b should be used to award PENNVEST Priority Rating Points for the impact of contaminated water supplies, when the contaminated water supply serves a significant portion of the project, but not the entire project. Determine what the percentage rate is for contaminated water supplies using standard procedures [Representative Sample (RS), Total Coliform (TC), Fecal Coliform (FC)/Total Coliform(TC)]. Enter the table from the left, at the appropriate contamination percentage rate, and follow it to the column that represents the population affected percentage rate. The intersection will determine the appropriate number of Domestic Water Supply (DWS) points that should be awarded for a project.

(e) To avoid double counting of population and comply with the maximum point assignments allowable in each Priority Rating Category, use Table 2. Rules for the use of this table are:

- (1) Independent of the actual % project population equivalent being rated, the % population for rating purposes will be the upper limits of either 30, 70 or 100%. For example:
 - a) 75% of the population commits 100% of the population
 - b) 5% of the population commits 30% of the population
- (2) If points are assigned under the 71 - 100% population column, no other needs may be awarded points since 100% of the population is committed for rating purposes.
- (3) The possible maximum combinations of point assignments from Table 2 are:
 - a) 3 in the 1-30 Column
 - b) 1 in the 1-30 Column and 1 in the 31-70 Column
 - c) 1 in the 71-100 Column

- (4) When the analysis area is totally composed of on-lot systems, the project area being rated should only be divided into more than one Public Health Category only if there is a very good reason.
- (5) Example:
- a) Method 1: 60% of the population is served by a wastewater treatment facility providing secondary treatment that is not meeting its NPDES Permit's Discharge Effluent Limits. Therefore, use the 31-70 Column (Representing 60% of the population) in Table 2 and assign to 2 points to Category D. In addition, through a representative survey, a 35% malfunction rate has been established for those structures utilizing on-lot wastewater disposal systems, which represents the remaining 40% of the project area's population. Therefore, use 1-30 Column (Representing 40% of the population) in Table 2 and assign 4 points to Category B. The final total allowable points using this method are six.
 - b) Method 2: 60% of Population is served by a wastewater treatment facility providing secondary treatment that is not meeting its NPDES Permit's Discharge Effluent Limits. Therefore, use the 1-30 Column (Representing 60% of the population) in Table 2 and assign 1 point to Category D. In addition, through a representative survey, a 35% malfunction rate has been established for those structures utilizing on-lot wastewater disposal systems, which represents the remaining 40% of the project area's population. Therefore, use the 31-70 column (representing 40% of the population) in Table 2 and assign 8 points Category B. The total allowable points using this method are nine.
 - c) The correct point assignment would be nine points under Method #2 since this would yield the greatest number of points.
 - d) NOTE: If the entire project area is in CATEGORY A (even if there are different types of needs), assign 20 points. For example, 1/3 of the community are wildcat sewers and 2/3 of the community have on-lot systems greater than 50% malfunction.

TABLE 2 -- PUBLIC HEALTH

Points Based On Community Public Health Effect and Adequacy of Current Treatment Facilities

% OF PROJECT EQUIVALENT POPULATION CATEGORY	0	1-30	31 - 70	71 - 100	CLASSIFICATIONS AND THEIR ASSOCIATED POINT VALUES (ALL VALUES INCLUSIVE)
A	0	4	12	20	HIGH (>OR=16)
B	0	3	8	12	MEDIUM HIGH (12 TO 15)
C	0	2	4	6	MEDIUM (5 TO 11)
D	0	1	2	3	LOW (1 TO 4)
E	0	0	0	0	N.S.D.I. (0)

AQUATIC HEALTH

(a) The number of points for Aquatic Health shall be based on the extent to which project implementation enhances the aquatic environment and water uses. (Use Tables 3 and 4)

(b) The following point values shall be used to determine rating points for this factor. (Use Tables 3 and 4 in assigning points.)

(1) **Wastewater Treatment Facility, Collection or Conveyance Impacts**

Category A - 20 Points Maximum – This category includes:

1. Projects that eliminate a wildcat sewer system discharge serving more than 50% of the EDUs in the project service area. For the purpose of this category, this is limited to piped, direct discharges to a surface stream.
2. Documented evidence in the project area of untreated or inadequately treated sewage discharged from collection and conveyance facilities in dry weather. See Note 2 under paragraph (c).
3. Documented evidence in the project area of intermittent discharges of untreated or inadequately treated sewage from collection and conveyance facilities in dry weather. See Note 2 under paragraph (c).
4. Hydraulic overload at the wastewater treatment facility during dry weather.

Category B - 12 Points Maximum – This category includes:

1. Projects that eliminate a wildcat sewer system discharge serving more than 25%, but less than or equal to 50% of the EDUs in the project service area. For the purpose of this category, this is limited to piped, direct discharges to a surface stream.
2. Visual evidence in the project area of discharges of untreated or inadequately treated sewage from sewage collection and conveyance facilities primarily in wet-weather. See Note 2 under paragraph (c).
3. Combined Sewer Overflow (CSO) needs where a Department Order is issued and Construction, not Operations and Maintenance, is required for correction. See Note 3 under paragraph (c).
4. CSO projects proposing construction activities to facilitate compliance with the Part C Conditions relating to CSO management controls found in an applicable Permit. See Note #3 under paragraph (c).
5. Hydraulic overload at the wastewater treatment facility during wet weather. See Note #4 under paragraph (c).

Category C - 6 Points Maximum – This category includes:

1. Projects that eliminate a wildcat sewer system discharge serving more than 10%, but less than or equal to 25% of the EDUs in the project

service area. For the purpose of this category, this is limited to piped, direct discharges to a surface stream.

2. Organic Overload.
3. The wastewater treatment facility is under a nutrient reduction directive.

Category D - 3 Points Maximum – This category includes:

1. Projects that eliminate a wildcat sewer system discharge serving less than 10% of the EDUs in the project service area. For the purpose of this category, this is limited to piped, direct discharges to a surface stream.
2. Projects designed to address NPDES violations.

Category E - 0 Points – Present wastewater treatment facilities are adequate or there is a lack of adequate documentation to award priority rating points in Categories A through D.

(2) **Water Quality (See Note 5 in paragraph (c))**

20 Points - Surface waters are capable of supporting a cold or warm water fishery, but documented evidence shows that they are not because of pollution caused by discharges of untreated or inadequately treated sewage which would be eliminated or upgraded by the project implementation. See Note 6 in paragraph (c).

12 Points - Surface waters are currently supporting a depressed cold or warm water fishery, shown through documentation to be caused by discharges of untreated or inadequately treated sewage that would be eliminated or upgraded by project implementation. See Note 7 in paragraph (c).

6 Points - Surface waters are currently supporting a cold or warm water fishery, documented to be periodically affected or threatened by the discharge of untreated or inadequately treated sewage which would be eliminated or upgraded by project implementation based upon evaluation of the stream's physical characteristics. See Notes 8 and 9 in paragraph (c).

3 Points – Surface waters are potentially impacted from on-lot systems if there is evidence acceptable to the ranking committee that the on-lot disposal systems may be the cause of the problem.

0 Points - No documentation or evidence that fish and aquatic life are affected by untreated or inadequately treated sewage that would be eliminated or upgraded by project implementation. See Note 10 in paragraph (c).

(c) In calculating the points for aquatic health and the use of Table 3 and 4, the following notes need to be considered:

NOTE 1 - The correction to a collection or conveyance system must be of a construction nature and not operation/maintenance. If the problem is of an operation and maintenance nature, it should not be rated. Rating points may only be awarded under this subcategory when collection/conveyance system deficiencies cause improper discharges to the ground surface, etc., due to structural deficiencies.

NOTE 2 - Raw discharges must include sewage solids and other like materials as typically seen in a raw, untreated discharge.

NOTE 3 - Combined Sewer Overflow (CSO) projects must propose construction activities that will lessen the impact of the affected CSO's on the receiving watercourse. The project (correction) must be of a construction nature and not just operation/maintenance.

NOTE 4 - Dry weather hydraulic overload will necessitate sufficient documentation that the condition exists.

NOTE 5 - The following documentation is required for *lake* application in the rating category:

- a) **Great Effect - 12 Points** - Field survey, impact analysis of point/non-point source contribution (National Lake Eutrophication Program) required.
- b) **Moderate Effect - 6 Points** - Impact from sewage sources is documented by macroinvertebrate survey.
- c) **Slight Effect - 3 Points** - Desktop evaluation of the relative significance of sewage sources versus non-sewage, non-point-source impact on lake degradation. Points would be awarded only if it can be judged that the impact related to sewage sources is significant. Department or municipal data is required.

NOTE 6 - Approved surveys include those done by the Pennsylvania Fish & Boat Commission. Survey data will generally characterize Benthic macroinvertebrates composed of greater than 90% facultative or pollution tolerant forms and less than 10% pollution sensitive forms; or fish community non-existent or dominated by rough or forage forms with absence or near absence of game or pan fish.

NOTE 7 - Survey data will generally characterize Benthic macroinvertebrates of greater than 50% facultative or pollution tolerant forms and less the 50% pollution sensitive forms; or fish community dominated by rough and forage species and depression of game or pan fish; or documented fish kills have occurred throughout the year.

NOTE 8 - On-lot disposal systems **cannot** be the basis for a calculated impact. Points for potential impacts should **not** be awarded unless the proper documentation is provided to support the hypothesis that the on-lot disposal systems may be the cause of the

problem. However, wildcat sewer systems are another story. Points for a potential impact can be awarded if an impact can be calculated.

NOTE 9 - NH₃-N upgrade due to ammonia toxicity (modeling) warrants 3 Points. Phosphorus upgrade does **not** warrant any points.

NOTE 10 - This would also include sterile stream conditions due to acid mine drainage.

(d) A project can **not** exceed 20 regular points for the Aquatic Health Category. However, up to an additional eight bonus points can be assigned to the project if:

- (1) **2 points** -- The project is in a priority watershed as identified by the Water Management Deputate as part of the Growing Greener application process. This list is updated on an annual basis and can be found by going to the internal website of the DEP Grants Center, and looking up the latest Growing Greener Grant Application. The link to this information is:
<http://www.depweb.state.pa.us/growinggreener/site/default.asp>
- (2) **2 points** -- The project discharges to a stream that does not meet its designated use due to an impairment caused by a sewage source and has been included on the Section 303d list for the future development of a Total Maximum Daily Load (TMDL). The link to this information is:
<http://www.depweb.state.pa.us/watersupply/cwp/view.asp?a=1261&q=480056>
- (3) **2 points** -- The project could potentially contribute towards the achievement of a TMDL. The link to this information is:
http://www.dep.state.pa.us/watermanagement_apps/tmdl/
- (4) **2 points** -- The project is designed to protect the water quality of streams whose designations are Class A Wild Trout Stream, Wilderness Trout, Exceptional Value or High Quality streams. The link to this information is:
Wilderness Trout - http://sites.state.pa.us/PA_Exec/Fish_Boat/wild98.htm
Class A Wild Trout - http://sites.state.pa.us/PA_Exec/Fish_Boat/classa98.htm
EV & HQ - http://www.pacode.com/secure/data/025/chapter93/025_0093.pdf

To assign these additional points, the location of greatest environmental benefit from project needs to be identified. Sources of information for finding this is the lat/long of the discharge point as identified in the NPDES permit or the center of the project as identified in the water quality permit.

TABLE 3 – AQUATIC HEALTH RATING

RATING CATEGORY

DISPOSAL SYSTEM

	A (20 points)	B (12 points)	C (6 points)	D (3 points)	E (0 points)
COLLECTION & CONVEYANCE	<p>Project eliminates wildcat sewer system or direct discharges of raw sewage to the surface waters of the Commonwealth serving >50% of the EDUs in the project service area. See Note 1 under paragraph (c).</p> <p>Raw sewage is discharging on public property during dry weather. See Note 2 under paragraph (c).</p> <p>Raw sewage is intermittently discharging on remote or public property in dry weather. See Note 2 under paragraph (c)</p>	<p>Project eliminates wildcat sewer system or direct discharges of raw sewage to the surface waters of the Commonwealth serving > 25% and < or = 50% of the EDUs in the project service area. See Note 1 under paragraph (c).</p> <p>Evidence of raw sewage discharging during wet weather. See Note 2 under paragraph (c).</p> <p>CSO's where department order is issued & <u>construction</u>. (NOT O&M) is required for correction. See Note 3 under paragraph (c).</p> <p>CSO <u>construction</u> project (NOT O&M) proposed to facilitate compliance with the part C conditions relating to CSO management controls found in an applicable permit. See Note 3 under paragraph (c).</p>	<p>Project eliminates wildcat sewer system or direct discharges of raw sewage to the surface waters of the Commonwealth serving > 10% and < or = 25% of the EDUs in the project service area. See Note 1 under paragraph (c).</p>	<p>Project eliminates wildcat sewer system or direct discharges of raw sewage to the surface waters of the Commonwealth serving < 10% of the EDUs in the project service area. See Note 1 under paragraph (c).</p>	<p>Collection and Conveyance System is adequate</p>
TREATMENT FACILITY	<p>Dry Weather Hydraulic Overload. See Note 4.</p>	<p>Wet Weather Hydraulic Overload</p>	<p>Organic Overload</p> <p>Treatment facility is under a nutrient reduction directive.</p>	<p>NPDES Violations</p>	<p>Treatment facility is adequate</p>

TABLE 3, AQUATIC HEALTH RATING, cont.

RATING CATEGORY

DISPOSAL SYSTEM

	A (20 points)	B (12 points)	C (6 points)	D (3 points)	E (0 points)
WATER QUALITY (See Note 5 in paragraph (c).	Aquatic Biologist Survey as performed or approved by the Department. See Note 6 in paragraph (c). Fishery not being supported	Aquatic Biologist Survey as performed or approved by the Department. See Note 7 in paragraph (c). Past evidence of fish kills. Fishery is depressed.	Calculated impact based on discharge and stream's physical characteristics. Isolated fish kill reported during drought conditions. See Notes 8 and 9 in paragraph (c). Fishery affected or threatened.	Potential impact is due to on-lot system malfunction.	No significant impact. See Note 10 in paragraph (c).

(d) To avoid double counting of population and comply with the maximum point assignments allowable in each Priority Rating Category, use Table 4. Rules for the use of this table are:

- (1) Independent of the actual % project population equivalent being rated, the % population for rating purposes will be the upper limits of either 30, 70 or 100%. For example:
 - a) 75% of the population commits 100% of the population
 - b) 5% of the population commits 30% of the population
- (2) If points are assigned under the 71 - 100% population column, no other needs may be awarded points since 100% of the population is committed for rating purposes.
- (3) The possible maximum combinations of point assignments from Table 4 are:
 - a) 3 in the 1-30 Column
 - b) 1 in the 1-30 Column and 1 in the 31-70 Column
 - c) 1 in the 71-100 Column
- (4) When the analysis area is totally composed of on-lot systems, the project area being rated should only be divided into more than one Aquatic Health Category only if there is a very good reason.
- (5) Example:
 - a) Method 1: 60% of the population is served by a wastewater treatment facility providing secondary treatment that is not meeting its NPDES Permit's Discharge Effluent Limits. Therefore, use the 31-70 Column (Representing 60% of the population) in Table 4 and assign to 2 points

to Category D. In addition, through a representative survey, a 35% malfunction rate has been established for those structures utilizing on-lot wastewater disposal systems, which represents the remaining 40% of the project area’s population. Therefore, use 1-30 Column (Representing 40 % of the population) in Table 2 and assign 4 points to Category B. The final total allowable points using this method are six.

- b) Method 2: 60% of Population is served by a wastewater treatment facility providing secondary treatment that is not meeting its NPDES Permit’s Discharge Effluent Limits. Therefore, use the 1-30 Column (Representing 60% of the population) in Table 2 and assign 1 point to Category D. In addition, through a representative survey, a 35% malfunction rate has been established for those structures utilizing on-lot wastewater disposal systems, which represents the remaining 40% of the project area’s population. Therefore, use the 31-70 column (representing 40% of the population) in Table 2 and assign 8 points Category B. The total allowable points using this method are nine.
- c) The correct point assignment would be nine points under Method #2 since this would yield the greatest number of points.
- d) NOTE: If the entire project area is in CATEGORY A (even if there are different types of needs), assign 20 points. For example, 1/3 of the community are wildcat sewers and 2/3 of the community have on-lot systems greater than 50% malfunction.

TABLE 4 – AQUATIC HEALTH

% OF PROJECT EQUIVALENT POPULATION	0	1-30	31 - 70	71 - 100	CLASSIFICATIONS AND THEIR ASSOCIATED POINT VALUES (ALL VALUES INCLUSIVE)
CATEGORY					
A	0	4	12	20	HIGH (>OR=16)
B	0	3	8	12	MEDIUM HIGH (12 TO 15)
C	0	2	4	6	MEDIUM (5 TO 11)
D	0	1	2	3	LOW (1 TO 4)
E	0	0	0	0	N.S.D.I. (0)

INFRASTRUCTURE HEALTH

(a) The number of points for Infrastructure Health shall be based on the extent to which project implementation will improve the overall technical, managerial or financial capability and promote the long-term sustainability of the system.

(b) The following point values shall be used to determine rating points for this factor. (Use Tables 5 and 6 in assigning points.)

Category A - 20 Points Maximum – This category includes:

1. Projects that eliminate a wildcat sewer system discharge serving more than 50% of the EDUs in the project service area.
2. Documented evidence in the project area of untreated or inadequately treated sewage discharged from collection and conveyance facilities in dry weather. See Note 1 under paragraph (c).
3. Documented evidence in the project area of intermittent discharges of untreated or inadequately treated sewage discharged from collection and conveyance facilities in dry weather. See Note 1 under paragraph (c).
4. Hydraulic overload at the wastewater treatment facility during dry weather. See Note 5 under paragraph (c).

Category B - 12 Points Maximum – This category includes:

1. Projects that eliminate a wildcat sewer system discharge serving more than 25%, but less than or equal to 50% of the EDUs in the project service area.
2. Visual evidence in the project area of discharges of untreated or inadequately treated sewage from sewage collection and conveyance facilities primarily in wet-weather. See Notes 1 and 3 under paragraph (c).
3. Combined Sewer Overflow (CSO) needs where a Department Order is issued and Construction, not Operations and Maintenance, is required for correction. See Note 2 under paragraph (c).
4. CSO projects proposing construction activities to facilitate compliance with the Part C Conditions relating to CSO management controls found in an applicable Permit. See Note 2 under paragraph (c).
5. Hydraulic overload at the wastewater treatment facility during wet weather.

Category C - 6 Points Maximum – This category includes:

1. Projects that eliminate a wildcat sewer system discharge serving more than 10%, but less than or equal to 25% of the EDUs in the project service area.
2. Projects that address safety concerns at a wastewater treatment facility or in the collection and conveyance system. See Note 4 under paragraph (c).
3. Organic Overload

Category D - 3 Points Maximum - This category includes:

1. Projects designed to address NPDES violations.

Category E - 0 Points - Present wastewater treatment facilities are adequate or there is a lack of adequate documentation to award priority rating points in Categories A through D.

Additional points can be added for the utilization of energy efficiency technologies, the installation and implementation of security measures and the promotion of asset management. To assess these additional points see Table 5a and Notes 6, 7 and 8 in paragraph (c).

(c) In calculating the points for Infrastructure Health and the use of Table 5 and 6, the following notes need to be considered:

NOTE 1 - The correction to a collection or conveyance system must be of a construction nature and not operation/maintenance. If the problem is of an operation and maintenance nature, it should not be rated. Rating points may only be awarded under this subcategory when collection/conveyance system deficiencies cause improper discharges to the ground surface, etc., due to structural deficiencies.

NOTE 2 - Combined Sewer Overflow (CSO) projects must propose construction activities that will lessen the impact of the affected CSO's on the receiving watercourse. The project (correction) must be of a construction nature and not just operation/maintenance.

NOTE 3 - This category includes the awarding of priority rating points for a project with hydraulic overloading which results in sewage backing up into the basements of structures. A project can qualify for a maximum of 12 Points, under Category B of the Infrastructure Health Factor, when the sewage backups are supported by documentation. Valid types of documentation are Chapter 94 Reports, evidence of public outcry, newspaper articles, or evidence that shows field staff has verified that the backup problem(s) has occurred.

NOTE 4 - Under the previous ranking system, points were assigned based on the severity of the safety issue. Under this framework, six points will be assigned to the project if it addresses a safety issue. To assign the six points, photographic evidence must be presented and evaluated by the review committee on a case-by-case basis. Examples of areas of concern include:

- Confined space and atmospheric hazards
- Falls or drowning (falling into tanks, reservoirs, pipes or pits)
- Chemical safety handling (lab & process)
- Electrical/Mechanical Safety (lock out/tag out)

- Trenching & Shoring

NOTE 5 - Dry weather hydraulic overload will necessitate sufficient documentation that the condition exists.

NOTE 6 - The cost of electrical energy is one of the largest expenses incurred. The efficient use of energy is essential to reduce costs, reduce pollution and reduce the need for the import of foreign oil. Energy Efficiency is an essential element of sustainable infrastructure. Electrical energy costs can be split into three general categories:

- Kilowatt Demand Charges
- Kilowatt Hour Consumption Charges
- Power Factor Charges (KVAR)

Kilowatt Demand Charges (KW) – This is a charge that is levied based upon the short term demand for electrical energy. A charge of “X” per KW of demand is common on commercial power bills. For example, 1 HP draws approximately 0.746 KW. A 10 HP motor can be expected to generate 7.46 KW of demand. This charge is the same whether the motor is used for 15 minutes or 24 hours a day per month. Depending on the utility, this charge would apply for a minimum of a month or a maximum of one year.

Kilowatt Hour Consumption (KWH) – This charge reflects the amount of electrical energy consumed. Using the same example as above, a 10 HP motor consumes approximately 7.46 KW of electricity per hour. If the motor is run for 1 hour, the charge would be for 7.46 KWH. One way to reduce energy consumption is to reduce duty cycle of the motor.

Power Factor (KVAR) – Power Factor is a measure of how efficiently a motor uses electrical power. If a facility has problems with power factor, the use of capacitors easily corrects this problem.

Utility Incentives – In some cases, power utilities have problems meeting high demand during temperature extremes, especially during the summer months. In these cases, power utilities offer incentives to water or wastewater systems by shedding the load. This can be accomplished by simply running the facility emergency generator for a period of time until the excessive demand subsides. This helps prevent costly black outs or brown outs and allows power to continue to flow to critical customers.

To promote energy efficiency, 1 point can be assessed to a project where the wastewater treatment system is already, or will as a result of the project:

- Develop and implement an aggressive preventative maintenance program.
- Incorporate the use of mechanical seals in centrifugal pumps.
- Utilize fine bubble air diffusion in conjunction with automated controls to enhance process control and provide for energy savings as well.

- Incorporate a de-nitrification zone that precedes nitrification regardless of permit requirements for total nitrogen reduction. (activated sludge systems only)
- Incorporate strategies for wet weather flow control. This would include the reduction of inflow and infiltration as well as BMP's that maximize the flow through the treatment process without washing out the biomass. In addition to the reduction of inflow and infiltration, this strategy could also include the storage of wet weather flows. In many cases, the use of automation may be necessary to fully implement a successful wet weather operational strategy.
- Energy integration to utilize methane gas production.

NOTE 7 - Threats to wastewater treatment systems come from a variety of man made and natural causes. Effective emergency and security planning can help to reduce the likelihood or the impact of these events. In many cases, it may not be possible to prevent an incident (especially natural events) but the impact of the event can be minimized to expedite the recovery of essential infrastructure. Examples of potential natural or man made threats include:

- Floods, tornados, hurricanes and other severe weather including drought
- Fires and explosions, chemical spills or releases
- Information infrastructure attacks (computer systems, databases, manuals, billing systems)
- Disruption of Critical Supply Chains or Utilities
- Vandalism, burglary or terrorist activity
- Disgruntled customers or disgruntled employees

In terms of security and emergency planning, the goal is to prevent or minimize the loss of human life, prevent or minimize damage to equipment and processes, and prevent or minimize the impact on the environment. To achieve this we want to focus on four areas:

Delay – It may not be possible to stop an attack for someone who is determined to penetrate a wastewater treatment system.. However, it is possible to make it more difficult to penetrate. Hardening a target can be something as simple as keeping a door locked.

Detection – Since it may not be possible to stop an event, the goal is to detect the occurrence of an event as soon as possible to minimize damage. Detection can include security intrusion devices (motion detectors, etc.) or automatic monitoring equipment. It can also be as simple as a visual observation of a problem.

Response – Through emergency planning, it is possible to implement a directed and efficient response to an emergency situation. A well coordinated response can easily save life and property.

Recover – At the conclusion of the event, the goal is to recover as quickly as possible to minimize losses. Effective recovery can be the result of effective planning. If delay and detection are optimized and the response is effective, recovery should be minimal. After any undesirable event, a critique should be held to look for ways to improve the emergency response plan.

An additional point (1 point) can be assigned to facilities that:

- Store extremely hazardous substances (as defined by EPA) in a secure building with limited access. These buildings shall have intrusion detection, fire detection and product leak detection that sound an alarm and notifies appropriate staff in the event of a system breach.
- Specify containment systems for extremely hazardous substances that meet program level 1 of section 112 (r) of the Federal Clean Air Act (Risk Management Planning).
- Monitor all key processes, including remote pump stations and facilities. The alarm system shall be capable of notifying plant personnel of a malfunction or failure of any key process. A key process is defined as any process or system that, should it fail, could cause harm to human or environmental health. These systems must have un-interruptible power supply capabilities that keep alarm systems functioning during times of power outages. In addition to monitoring of key processes, the alarm system needs to also monitor for fire, intrusion, loss of normal power and high or low flow.
- Install access systems that limit access to authorized personnel and log entry and exit of the facility.
- Install surveillance systems that allow for operators to monitor equipment and processes from a control room or that may be remotely accessed.
- Install data protection equipment or software such as a firewall to protect computer systems or SCADA systems used in running or monitoring the system.

NOTE 8 - One point can be added to a project where the facility demonstrates a proactive approach to asset management. Proactive Asset Management can be defined as a “yes” answer to at least four of the following questions:

1. Is there a public education or outreach program in place designed to highlight the services provided by the applicant?
2. Does the facility use a maintenance management system that prompts needed maintenance activities, records the completion of those activities and records their cost?
3. Is the location, age and condition of all major assets known and recorded?
4. Is there a plan for the replacement of all major assets?
5. Is there a long-term budget (10 year plus) that describes how much money will be needed to pay for needed infrastructure replacement?

6. Are current user charge rates consistent with what will be needed to implement the long-term budget?

Questions 1 through 4 would be the first level of asset management capability. If the answer to five and six is also “yes”, **add another point.**

TABLE 5 – INFRASTRUCTURE HEALTH RATING

RATING CATEGORY

DISPOSAL SYSTEM

	A (20 points)	B (12 points)	C (6 points)	D (3 points)	E (0 points)
COLLECTION & CONVEYANCE	<p>Projects that eliminate a wildcat sewer system discharge serving more than 50% of the EDUs in the project service area.</p> <p>Raw sewage discharging on public property during dry weather. See Notes 1 and 3 under paragraph (c).</p> <p>Raw sewage intermittently discharging on remote or public property in dry weather. See Note 1 under paragraph (c).</p>	<p>Projects that eliminate a wildcat sewer system discharge serving more than 25%, but less than or equal to 50% of the EDUs in the project service area.</p> <p>Evidence of raw sewage discharging during wet weather. See Notes 1 and 3 under paragraph (c).</p> <p>CSO's where department order is issued & <u>construction</u>, (NOT O&M) is required for correction. See Note #2 under paragraph (c).</p> <p>CSO <u>construction</u> project (NOT O&M) proposed to facilitate compliance with the part C conditions relating to CSO management controls found in an applicable permit. See Note #2 under paragraph (c).</p>	<p>Projects that eliminate a wildcat sewer system discharge serving more than 10%, but less than or equal to 25% of the EDUs in the project service area.</p> <p>Safety. See Note 4 in paragraph (c).</p>	<p>Projects that eliminate a wildcat sewer system discharge serving less than 10% of the EDUs in the project service area.</p>	
TREATMENT FACILITY	<p>Dry Weather Hydraulic Overload See Note #5.</p>	<p>Wet Weather Hydraulic Overload</p>	<p>Organic Overload</p> <p>Safety. See Note 4 in paragraph (c).</p>	<p>NPDES Violations</p>	

Use Table 5a to add points for energy efficiency, security and proactive asset management. These points are in addition to those assigned in Table 5.

Table 5a – Energy Efficiency and Security

	Energy (1 point)	Security (1 point)	Proactive Asset Management (1 or 2 points)
Energy Efficiency and Security	Energy Efficiency See Note 6 in paragraph (c).	Security See Note 7 in paragraph (c).	Proactive Asset Management See Note 8 in paragraph (c)

(d) To avoid double counting of population and comply with the maximum point assignments allowable in each PENNVEST Priority Rating Category, use Table 6. Rules for the use of this table are:

- (1) Independent of the actual % project population equivalent being rated, the % population for rating purposes will be the upper limits of either 30, 70 or 100%. For example:
 - a) 75% of the population commits 100% of the population.
 - b) 5% of the population commits 30% of the population.
- (2) If points are assigned under the 71 - 100% population column, no other needs may be awarded points since 100% of the population is committed for rating purposes.
- (3) The possible maximum combinations of point assignments from Table 6 are:
 - a) 3 in the 1-30 Column
 - b) 1 in the 1-30 Column and 1 in the 31-70 Column
 - c) 1 in the 71-100 Column
- (4) When the analysis area is totally composed of on-lot systems, the project area being rated should only be divided into more than one Infrastructure Health Category only if there is a very good reason.
- (5) Example:
 - a) Method 1: 60% of the population is served by a wastewater treatment facility providing secondary treatment that is not meeting its NPDES Permit’s Discharge Effluent Limits. Therefore, use the 31-70 Column (Representing 60% of the population) in Table 6 and assign to 2 points to Category D. In addition, through a representative survey, a 35% malfunction rate has been established for those structures utilizing on-lot wastewater disposal systems, which represents the remaining 40% of the project area’s population. Therefore, use 1-30 Column (Representing 40 % of the population) in Table 6 and assign 4 points to Category B. The final total allowable points using this method are six.
 - b) Method 2: 60% of Population is served by a wastewater treatment facility providing secondary treatment that is not meeting its NPDES Permit’s Discharge Effluent Limits. Therefore, use the 1-30 Column

- (Representing 60% of the population) in Table 6 and assign 1 point to Category D. In addition, through a representative survey, a 35% malfunction rate has been established for those structures utilizing on-lot wastewater disposal systems, which represents the remaining 40% of the project area’s population. Therefore, use the 31-70 column (representing 40% of the population) in Table 6 and assign 8 points Category B. The total allowable points using this method are nine.
- c) The correct point assignment would be nine points under Method #2 since this would yield the greatest number of points.
 - d) **NOTE:** If the entire project area is in CATEGORY A (even if there are different types of needs), assign 20 points. For example, 1/3 of the community are wildcat sewers and 2/3 of the community have on-lot systems greater than 50% malfunction.

TABLE 6 – INFRASTRUCTURE HEALTH

% OF PROJECT EQUIVALENT POPULATION CATEGORY	0	1-30	31 - 70	71 - 100	CLASSIFICATIONS AND THEIR ASSOCIATED POINT VALUES (ALL VALUES INCLUSIVE)
A	0	4	12	20	HIGH (>OR=16)
B	0	3	8	12	MEDIUM HIGH (12 TO 15)
C	0	2	4	6	MEDIUM (5 TO 11)
D	0	1	2	3	LOW (1 TO 4)
E	0	0	0	0	N.S.D.I. (0)

COMPLIANCE

(a) The number of points for Compliance shall be based on the extent to which project implementation improves a community's ability to comply with the state and federal statutes, regulations and standards.

(b) The following point values, in conjunction with Table 7, shall be used to determine rating points for this factor:

(1) **Enforcement Status & Overload Conditions -**

- a) **20 Points** – The project provides:
1. Compliance with an order ISSUED by the Department under the Clean Streams Law, the Sewage Facilities Act, the Federal Government, or the Courts that directs a municipal entity to address problems with on-lot wastewater disposal system(s) and/or a wastewater treatment facility.
 2. Compliance with Consent Order and Agreements negotiated and executed by the Department and the affected party(ies), and Consent Order and Adjudications executed by the Department, the affected party(ies) and the appropriate court of jurisdiction. The Consent Order's primary goal must be to address problems at wastewater treatment facility, or wastewater collection/conveyance facility(ies) concerns.
- b) **15 Points** - The Department has evaluated the pollution or public health problems in the municipality and gathered sufficient data to support the issuance of an order for corrective action, or has adopted revised water quality standards which cannot be met by the existing treatment facilities, but an upgrade order has not been issued. This project category includes:
1. Projects designed to address the resolution of on-lot wastewater disposal system problems where the municipal entity(ies) involved is currently NOT under an Order from the Department or any other agency or Court with jurisdiction. The project must be able to meet the "YES-NO-YES" criteria outlined in NOTE 1 in paragraph (c) AND be designed to eliminate an on-lot wastewater disposal system malfunction rate which is currently >25%. Non-municipal project applicants are not eligible to receive points in this sub-category using the "YES-NO-YES" criteria.
 2. Documented evidence exists of the occurrence of substandard on-lot systems is >50%.
 3. Projects that meet the criteria under Table 8, Domestic Water Supply, for the 15 point category.
 4. Projects that enable the permittee of an NPDES-permitted wastewater treatment facility to bring the facility into compliance with more

stringent effluent limits contained in a revised and upgraded NPDES Permit.

5. Projects that eliminate a wildcat sewer system.
6. Compliance with a nutrient reduction directive issued by the Department.
7. A CSO/SSO exists with a documented impact on the treatment processes of a drinking water system.

c) **10 Points** - The point category includes:

1. Projects where the Department has evaluated the pollution or public health problems in the municipality and gathered sufficient data to support the issuance of an order for corrective action, but an upgrade order has not been issued. The project has been designed to address the resolution of on-lot wastewater disposal system problems where the municipal entity(ies) involved is currently NOT under an Order from the Department or any other agency or Court with jurisdiction. The project must be able to meet the “YES-NO-YES” criteria outlined in NOTE#1 in paragraph (c) AND be designed to eliminate an on-lot wastewater disposal system malfunction rate which is currently $\geq 10\%$ AND $\leq 25\%$.
2. Documented evidence exists of the occurrence of substandard on-lot systems is $>25\%$ and $\leq 50\%$.
3. Projects that meet the criteria under Table 8, Domestic Water Supply, for the 10 point category.
4. The professional opinion of the hydrogeologist indicates that groundwater contamination is related to on-lot system malfunctions or the density of on-lot systems in the area .
5. Projects that are part of an APPROVED Corrective Action Plan/Corrective Plan and Schedule (C.A.P./C.P.& S.) designed to allow the permittee of an NPDES-permitted wastewater treatment facility to bring its facility into compliance with the discharge parameters contained in the facility’s NPDES permit. Points under this sub-category may not be awarded until such time as the C.A.P./C.P.& S. is APPROVED by the Department. The “Yes-No-Yes” Scenario in Note 1 applies.
6. Wastewater collection or conveyance system construction projects that are part of an APPROVED Corrective Action Plan/Corrective Plan & Schedule (C.A.P./C.P.&S.) or an approved Act 537 plan. Points under this sub-category may not be awarded until such time as the plan is APPROVED by the Department. There must also be a Sewer Connection Prohibition or Ban in place.
7. CSO Construction Projects (Not O&M) proposed to facilitate compliance with the Part C condition relating to CSO management controls found in an applicable permit. See Note 2 in paragraph (c).

d) **5 Points** - This category includes:

1. Projects that meet the criteria under Table 8, Domestic Water Supply, for the 5 point category
2. Projects where sewer connection ban or prohibition is imposed in the project area but no Corrective Plan and Schedule (CP&S) has been approved by the Department.. The project is NOT currently part of an APPROVED Corrective Action Plan/Corrective Plan and Schedule (C.A.P./C.P.& S.) designed to allow the permittee of an NPDES-permitted wastewater treatment facility to bring its facility into compliance with the discharge parameters contained in the facility's NPDES permit. Points under this point category should be awarded when an NPDES-permitted facility is hydraulically or organically overloaded OR when a wastewater collection or conveyance system component/structure is hydraulically overloaded, but a C.A.P./C.P.& S. has NOT been APPROVED by the Department.
3. Projects where documentation exists to indicate the treatment processes of a nearby drinking water system are impacted by a discharge from a wastewater treatment facility.

- e) **0 Points** - No state or federal order is outstanding, nor should one be issued. This sub-category also includes projects where no sewer connection ban or connection prohibition has been imposed in the project area.

(c) In calculating the points for compliance and the use of Table 7, the following notes need to be considered:

NOTE 1 - There was significant debate concerning the Department's reasoning for not issuing orders to certain projects. When the regulations were initially developed, it was recognized that it would appear that some municipalities were being rewarded for recalcitrant conduct. Enforcement status was also generally viewed as an overall indicator of the Department's measure of project importance or priority. The problem with this logic occurs where there is a project of greater or equal importance to the Department, but because of desire, initiative, or cooperation on the municipality's/authority's part, an order to correct the problem or to establish an enforceable schedule is unnecessary. Given this scenario, the Department believed it would be encouraging the wrong perception by awarding 10 Points in priority to those municipalities to which the Department needed to issue orders. Some regional interpretation of this rating component has resulted in assigning Enforcement Status Points to nearly all projects. The Department "could" issue an order in practically all situations. To remedy this misinterpretation, the following direction is provided:

- a) **General:** Where an Order has NOT been issued, answer the following three questions in conjunction with the proposed project:
- 1) Is there a Department-approved schedule for correction or project implementation (Act 537 Plan Implementation Schedule, Corrective Action Plan with Implementation Schedule, etc.)?

- 2) Will an Order be necessary, in all likelihood, to ensure correction or project implementation?
- 3) Upon evaluating the supporting documentation, has it been determined that the Department **would** devote the necessary staff time to issue an order to ensure correction or project implementation? For on-lot malfunction correction projects, this question **CANNOT** be answered “YES” unless at least a 10% on-lot wastewater disposal system malfunction rate has been documented or the proposed project is intended to correct a wastewater treatment facility problem, and points have been awarded under Public Health and Category “D”.

The answers to these three questions must be as follows: Question #1-Yes, Question #2-No, and Question #3-Yes; in order to award either the seven or five Enforcement Status Points where there is currently not an Order in place. If the history of the project suggests that an order will be necessary, do **NOT** award the ten points until such time as the Order is issued. Also, non-municipal project applicants are not eligible to receive points in this sub-category using the “Yes-No-Yes” criteria.

- b) **Documentation - NO enforcement points are to be awarded for projects where the documented septic system malfunction rate is less than 10%.** However, where sufficient documentation is provided to enable the Department’s staff to determine that the project area’s on-lot wastewater disposal systems are malfunctioning downward and contaminating water supplies, then enforcement points may be awarded even where the documented surface malfunction rate is less than 10%. In such a case, water supply survey data and soils and hydrogeological information would show that the potential for groundwater contamination is high and that, indeed, at least 10% of the representative sample well tests are contaminated (10% positive for total coliform, and 20% of those samples also positive for fecal coliform; with no well-construction bias).

NOTE 2 - CSO projects must propose construction activities that will lessen the impact of the affected CSO’s on the receiving watercourse. The project (correction) must be of a construction nature and not just operation/maintenance.

TABLE 7 -- COMPLIANCE RATING

RATING CATEGORY

DISPOSAL SYSTEM

	20 POINTS	15 POINTS	10 POINTS	5 POINTS	0 POINTS
ON-LOT PROBLEMS	Order or consent order issued to require correction of an On-Lot Problem(s).	<p>“Yes-No-Yes” Scenario in Note 1 in paragraph (c) applies where the on-lot malfunction rate is >25%.</p> <p>The documented occurrence of substandard systems is >50%.</p> <p>Meets the criteria in Table 8 Domestic Water Supply for the 15 point category.</p>	<p>“Yes-No-Yes” Scenario in Note 1 in paragraph (c) applies where the on-lot malfunction rate is >or=10% AND <or=25%.</p> <p>The documented occurrence of substandard systems is >25% and < or = 50%</p> <p>Meets the criteria in Table 8 Domestic Water Supply for the 10 point category.</p> <p>The professional opinion of the hydrogeologist indicates that groundwater contamination is related to on-lot system malfunctions or the density of on-lot systems in the area.</p>	Meets the criteria in Table 8, Domestic Water Supply for the 5 point category.	No Order or Consent Order is currently in place
TREATMENT FACILITY (WWTF)	Order or Consent Order issued to require correction of a problem(s) at a treatment facility	<p>WWTF that cannot meet revised and upgraded NPDES effluent limits (No Order Issued)</p> <p>WWTF is under a nutrient reduction directive.</p>	C.A.P./C.P.&S. APPROVED to Address Hydraulic or Organic Overload at WWTF. The “Yes-No-Yes” Scenario in Note# 1 applies.	<p>Sewer Connection Prohibition or Ban imposed but C.A.P./C.P.&S. NOT approved.</p> <p>Documentation exists related to the impact on treatment processes at a drinking water system due to discharge of WWTF.</p>	No Order, Consent Order, Connection Ban or Connection Prohibition is currently in place.

TABLE 7 – COMPLIANCE RATING, cont.

RATING CATEGORY

DISPOSAL SYSTEM

	20 POINTS	15 POINTS	10 POINTS	5 POINTS	0 POINTS
COLLECTION & CONVEYANCE	Order or Consent Order issued to require correction of problem(s) related to a Wastewater Collection/Conveyance System	Project eliminates a wildcat sewer system discharge. CSO/SSO discharge has a documented impact on treatment processes at a drinking water system.	Sewer Connection Prohibition or Ban imposed with a C.A.P./C.P.&S. Or Act 537 Plan approved. CSO <u>Construction Project (Not O&M)</u> proposed to facilitate compliance with the Part C conditions in an Applicable Permit - See NOTE#2 in paragraph (c)	Sewer Connection Prohibition or Ban imposed but C.A.P./C.P.&S. NOT approved.	No Order, Consent Order, Connection Ban or Connection Prohibition is currently in place.

NOTE: If the system can demonstrate a proactive approach to managing its assets and/or long-term capital improvement planning, an additional 5 points will be awarded. However, a project can not exceed a total of 20 points in this category.

TABLE 8 – DOMESTIC WATER SUPPLY
Compliance

	15 POINTS	10 POINTS	5 POINTS	0 POINTS
PRIVATE WELLS	> 25% of “Representative Sample” contaminated	> 10% and <or= 25% of “Representative Sample” contaminated	>or= 5% AND <or= 10% of “Representative Sample” contaminated	< 5% of “Representative Sample” contaminated
PUBLIC SOURCES	Water Supply Intake subject to water quality violations that occur frequently	Water Supply Intake subject to water quality standards violations that occur depending on critical source conditions (Q ₇₋₁₀ Low Stream Flow conditions)	Water Supply Intake subject to water quality standards violations that could occur depending on critical source conditions (Q ₇₋₁₀ Low Stream Flow conditions)	Water Supply Intake subject to water quality standards violations that are remote

COMMUNITY HEALTH

(a) The number of points for Community Health shall be based upon the extent to which project implementation will encourage or accomplish regionalization or consolidation of facilities, the population of the project area and the median household income of the affected municipalities.

(b) The following point values shall be used to determine rating points for this factor:

(1) **Encouragement of Regionalization and Consolidation -**

2 Points - Project implementation will result in the elimination of one or more existing discharges from facilities constructed and operated under Department-issued NPDES or Water Quality Management Permits. In addition, elimination of ALL NPDES-permitted Combined Sewer Overflow (CSO) Points in a combined wastewater collection/conveyance system, by the proposed project, is justification for two (2) Points under this subcategory. Project implementation will result in the use of decentralized wastewater disposal systems such as drip irrigation, spray irrigation or other community on-lot disposal systems.

1 Point - Project implementation will result in consolidation or regionalization of operational, maintenance or monitoring functions with other dischargers.

In addition to those projects where existing NPDES facilities are eliminated and replaced by regional facilities, one point may be awarded under this category where a second municipality, or part thereof, is brought into an existing system via interceptor and/or collector sewers. This one point may only be awarded once to a project in the “second” municipality. Additional, future projects which propose the extension of sewers after the “second” municipality is already discharging wastewater to its neighboring municipality’s treatment facility, are not qualified for the one point. One point is also justified when some but not ALL NPDES-permitted CSO points in a combined wastewater collection/conveyance system are eliminated by the proposed project.

0 Points - Project implementation will result in no regionalization or consolidation of wastewater treatment facilities or operational functions. Also, an upgrade to an existing treatment facility warrants no points.

(2) **Population Affected -**

2 Points - Project equivalent population greater than 50,000 persons or project serves a small municipality. See Notes 1 through 4 in paragraph (c).

1 Point - Project equivalent population is 5,001 persons to 50,000 persons. See Notes 1 through 4 in paragraph (c).

0 Points - Project equivalent population is 1 person to 5,000 persons. See Notes 1 through 4 in paragraph (c).

(3) **Median Household Income** -

1 Point - Project's municipal median household income, as per the most recent United States Bureau of the Census figures, is below the Pennsylvania statewide, municipal median household income of \$40,106. See Notes 5 and 6 in paragraph (c).

0 Points - Project's municipal median household income, as per the most recent United States Bureau of the Census figures, is above the Pennsylvania statewide, municipal median household income of \$40,106. See Notes 5 and 6 in paragraph (c).

(c) In calculating the points for Community Health, the following notes need to be considered:

NOTE 1 - A small municipality is defined as a municipality having a total population of 3,500 persons or less based on the most recent United States Bureau of the Census figures.

NOTE 2 - Where a project will serve more than one municipality, the project shall qualify as a small municipality project if **EACH** municipality involved conforms to the definition of a small municipality.

NOTE 3 - Non-municipal projects do **NOT** qualify for "small municipality" points. The project may, however, be awarded points based on the project's equivalent population.

NOTE 4 - For projects proposing industrial discharges, assign points for "Population Affected" based on an equivalent organic strength of the discharge using 0.17 lbs. of BOD₅ per person per day in addition to the municipal population figures.

NOTE 5 - Where a project will serve more than one municipality, the median household income used will be that associated with the municipality contributing the **greatest number** of users to the project.

NOTE 6 - Non-Municipal projects do **NOT** qualify for any Points under the Municipal Median Household Income Category.