



ACEC/PA

**American Council of Engineering Companies
of Pennsylvania**

Municipal Audit Program

**ACEC/PA
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How to Use the Municipal Audit

The American Council of Engineering Companies of Pennsylvania (ACEC/PA) has written this manual to help municipalities maintain their infrastructure and plan for future growth. The manual is called the Municipal Audit and it is a town physical - a check-up for the infrastructure you use every day - performed by the municipal government staff or a Consulting Engineer.

It evaluates the general physical conditions of important infrastructures such as roads, water and sewer facilities, solid and hazardous waste facilities, public buildings, stormwater drainage, and park and recreation areas.

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From this evaluation, the results identify problems and help to plan improvements.

It's easy to use the Municipal Audit. First, you must identify any infrastructure you share with other municipalities and be sure to have the Audit performed by the same people from start to finish to ensure continuity. The next steps are simple.

1. Review the General Guidelines/Questionnaire.
2. Select only those components specific to your municipality.
3. Evaluate physical conditions of your municipality.
4. Develop conclusions.
5. Prepare plan for improvements.
6. Secure engineering services.

As a municipal official you know how difficult it can be to play "catch-up" with repairs to your infrastructure. Facilities that are not kept up can cost far more to repair or replace than those that are properly maintained.

That's why the best time to complete an audit of your municipality's infrastructure is now, even if your infrastructure seems to be "healthy."

This flexible audit has been designed to help you take control of the upkeep of those facilities that are specific to your municipality.

By reviewing the ACEC/PA Municipal Audit, you can quickly discover which facilities in your municipality may need immediate attention. Also, you can begin planning for future repairs or replacements.

Call ACEC/PA at 717-540-6811 for more information about the Municipal Audit or write to us at 2040 Linglestown Road, Suite 200, Harrisburg, PA 17110.

Grading Guidelines

<u>No.</u>	<u>Grade</u>	<u>Description</u>
1	Outstanding	Optimum or ideal situation No improvement needed
2	Above Average	Very good situation Little improvement action needed
3	Average	Adequate; sufficient Could be improved, but no urgent need
4	Below Average	Substandard situation Needs improvement Periodic problems experienced
5	Deficient	Unsatisfactory condition Continuing problems Urgent need for improvement
Comments		Other conditions as specified

ACEC/PA Municipal Audit Program

General Operations

For:	1 - Outstanding 2 - Above Average 3 - Average 4 - Below Average 5 - Deficient
By:	
Date:	

A. Operation and Management

1. Adequate management and administrative staff	1	2	3	4	5
2. Business Plan in place addressing physical, operational, managerial and financial issues	1	2	3	4	5
3. Annual operating budget developed and maintained	1	2	3	4	5
4. Detailed records of revenues and expenses exist and are maintained	1	2	3	4	5
5. Revenues sufficient to satisfy debt, operating expenses and to provide reserves	1	2	3	4	5
6. Long range plan developed and in place addressing major capital expenditures	1	2	3	4	5
7. Space is provided and is of adequate size to store and maintain plans and specs of municipal records	1	2	3	4	5
8. Adequate filing system is maintained	1	2	3	4	5
9. Staff maintains knowledge of industry's practices, activities and technologies	1	2	3	4	5

10. Comprehensive and up-to-date resource library of pertinent codes and regulations	1	2	3	4	5
11. Standard ordinances are current and accessible	1	2	3	4	5
12. Utilization of automated record keeping	1	2	3	4	5

Comments

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ACEC/PA Municipal Audit Program

Buildings and Grounds

For:	1 - Outstanding 2 - Above Average 3 - Average 4 - Below Average 5 - Deficient
By:	
Date:	

A. Organization and Management

1. Annual operating budget developed and maintained	1	2	3	4	5
2. Detailed records of revenues and expenses exist and are maintained	1	2	3	4	5
3. Long range plan developed and in place addressing major capital expenditures	1	2	3	4	5
4. Space is designated to store on site all pertinent building plans	1	2	3	4	5
5. Building/Site plans are filed and are accessible	1	2	3	4	5
6. Building/Site plans are up-to-date, legible and in good condition	1	2	3	4	5
7. Operating and maintenance manuals and reports of equipment are up-to date and comprehensive	1	2	3	4	5
8. Building code evaluation of existing structures current and on file	1	2	3	4	5

Comments _____

B. Site Evaluation

1. Access to property	1	2	3	4	5
2. Accessibility, ADA compliance, condition of walkways	1	2	3	4	5
3. Adequate parking	1	2	3	4	5
4. Adequate site lighting, functional energy efficient, maintainable, etc.	1	2	3	4	5
5. Adequate site drainage, storm run-off, etc.	1	2	3	4	5
6. Utilities and shut-offs identified and operable	1	2	3	4	5
7. Condition of building service utilities	1	2	3	4	5
8. Adequate physical size of site for future growth	1	2	3	4	5
9. Condition of grounds, landscaping, etc.	1	2	3	4	5
10. Topographic survey information	1	2	3	4	5
11. Underground storage tanks	1	2	3	4	5
12. Above ground storage tanks	1	2	3	4	5

Comments _____

C. General Evaluation

1. Physical appearance of structure	1	2	3	4	5
2. Physical size relative to function of building	1	2	3	4	5
3. Accessibility, ADA compliance	1	2	3	4	5
4. Condition of furnishings	1	2	3	4	5
5. Condition of roof and roof drainage	1	2	3	4	5
6. Condition of exterior wall and windows	1	2	3	4	5
7. Adequate roof & exterior wall insulation	1	2	3	4	5
8. Record of lead paint analysis information	1	2	3	4	5
9. Facilities provided for adequate housekeeping	1	2	3	4	5

10. Physical layout of interior spaces	1	2	3	4	5
11. Exits identified and unobstructed	1	2	3	4	5
12. Recorded inventory of asbestos-containing material	1	2	3	4	5

Comments _____

D. Structural Evaluation

1. Soils and drainage around structure	1	2	3	4	5
2. Foundations and slabs on grade	1	2	3	4	5
3. Columns and walls	1	2	3	4	5
4. Floor framing and deck	1	2	3	4	5
5. Ceiling	1	2	3	4	5
6. Roof framing and deck	1	2	3	4	5
7. Chimneys or other freestanding structures	1	2	3	4	5
8. Floor load capacities known and posted	1	2	3	4	5
9. Existing floor loads and allowable capacities	1	2	3	4	5
10. Roof additions/modifications for the modified loading and/or snow drift	1	2	3	4	5
11. Structural plans of any modifications are available and stamped by a Professional Engineer	1	2	3	4	5
12. Access available to attic, ceiling and crawl spaces for inspections	1	2	3	4	5
13. Detailed record of annual structural inspections	1	2	3	4	5

Comments _____

E. HVAC Evaluation

1. Code compliant mechanical room	1	2	3	4	5
2. Mechanical equipment identification	1	2	3	4	5
3. Condition of mechanical equipment	1	2	3	4	5
4. Heating system operational and reliable	1	2	3	4	5
5. Ventilating system operational and reliable	1	2	3	4	5
6. Air Conditioning system operational and reliable	1	2	3	4	5
7. HVAC drawings and diagrams	1	2	3	4	5
8. Air distribution ductwork	1	2	3	4	5
9. Test and balance report of installed mechanical equipment available and up-to-date	1	2	3	4	5
10. Heating and Air Conditioning piping	1	2	3	4	5
11. Accessible and identified piping isolation valves	1	2	3	4	5
12. Housekeeping of mechanical room and equipment	1	2	3	4	5
13. Indoor Air Quality (IAQ)	1	2	3	4	5
14. Insulation (piping, ductwork, etc)	1	2	3	4	5
15. Acoustics and vibration of mechanical equipment	1	2	3	4	5
16. Supporting of equipment, piping and ductwork	1	2	3	4	5
17. HVAC Controls	1	2	3	4	5
18. Energy efficiency relative to mechanical equipment	1	2	3	4	5
19. Recorded fuel/energy demand and consumption	1	2	3	4	5
20. Refrigerant management system	1	2	3	4	5
21. Inspection of chimneys and flues	1	2	3	4	5
22. Record of annual boiler inspections	1	2	3	4	5

Comments _____

F. Plumbing Evaluation

1. Accessibility, ADA compliance	1	2	3	4	5
2. Isolation valves accessible and identified.	1	2	3	4	5
3. Utility service: gas, water, sewer functional and sufficiently sized for current needs	1	2	3	4	5
4. Plumbing drawings and diagrams	1	2	3	4	5
5. Backflow prevention on water service	1	2	3	4	5
6. Hot water heating equipment	1	2	3	4	5
7. Exterior hose bibbs for maintenance and housekeeping	1	2	3	4	5
8. Plumbing fixtures (urinals, sinks, etc.)	1	2	3	4	5
9. Plumbing equipment (sewage pumps, etc.)	1	2	3	4	5
10. Piping insulation	1	2	3	4	5
11. Cleanouts on sewer piping	1	2	3	4	5
12. Overall condition of plumbing piping	1	2	3	4	5
13. Supporting of plumbing piping and equipment	1	2	3	4	5
14. Plumbing equipment identification	1	2	3	4	5

Comments _____

G. Fire Protection Evaluation

1. Sprinkler system	1	2	3	4	5
2. Flow test data available and up-to-date	1	2	3	4	5
3. Meets insurance carrier's requirements	1	2	3	4	5
4. Satisfies current building function	1	2	3	4	5
5. Backflow prevention on fire service	1	2	3	4	5
6. Smoke detection	1	2	3	4	5
7. Building evacuation plan established and posted	1	2	3	4	5

8. Fire department connection identified and accessible	1	2	3	4	5
9. Sprinkler system drawings	1	2	3	4	5
10. Record of annual sprinkler tests	1	2	3	4	5
11. Inspector's test connection identified and accessible	1	2	3	4	5
12. Standpipes and hose racks located where required, identified and in working condition	1	2	3	4	5
13. Piping and equipment supports	1	2	3	4	5

Comments _____

H. Electrical Evaluation

1. Electrical service	1	2	3	4	5
2. Code compliance	1	2	3	4	5
3. Is service adequate for current usage	1	2	3	4	5
4. Electrical system drawings and diagrams available	1	2	3	4	5
5. Grounding	1	2	3	4	5
6. Sub-panels	1	2	3	4	5
7. Electrical room(s) meet code	1	2	3	4	5
8. Housekeeping of electrical room(s) and equipment	1	2	3	4	5
9. Lighting	1	2	3	4	5
10. Lighting energy efficient	1	2	3	4	5
11. Emergency lighting	1	2	3	4	5
12. Emergency power system	1	2	3	4	5
13. Adequacy of power outlets	1	2	3	4	5
14. Branch circuit wiring	1	2	3	4	5
15. Telephone service	1	2	3	4	5
16. Data/communications wiring	1	2	3	4	5

17. Security system	1	2	3	4	5
18. Public Address system	1	2	3	4	5
19. Electrical systems ADA compliance	1	2	3	4	5

Comments _____

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ACEC/PA Municipal Audit Program

Parks/Open Space/Recreation

For:	1 - Outstanding 2 - Above Average 3 - Average 4 - Below Average 5 - Deficient
By:	
Date:	

A. Parks, Open Space, Recreation

1. Adequate open space available	1	2	3	4	5
2. Inventory of existing active/passive recreation, with current physical conditions	1	2	3	4	5
3. Sufficient for current and future populations and their user needs	1	2	3	4	5
4. Compatibility with community comprehensive plan and ordinances	1	2	3	4	5
5. Identification of historic and environmental sensitive lands worthy of preservation	1	2	3	4	5
6. Relationship to neighboring communities and regional facilities	1	2	3	4	5
7. Adequacy of inspections and maintenance of park and recreation facilities	1	2	3	4	5
8. Accessibility and parking provisions	1	2	3	4	5
9. Appropriate location of facilities within the community	1	2	3	4	5
10. Coordination of programmed use of facilities with school and other community sports groups	1	2	3	4	5

11. ADA (Americans with Disabilities Act) compliance at park and recreation facilities	1	2	3	4	5
12. Current facilities utilized at maximum community benefit	1	2	3	4	5
13. Staff and equipment availability to maintain open space, park, and recreation facilities	1	2	3	4	5
14. Support, infrastructure such as lighting, restrooms, drinking water, seating	1	2	3	4	5
15. Priorities of open space, parks, and recreational need	1	2	3	4	5
16. Level of community input and acceptance	1	2	3	4	5
17. Comprehensive park, recreation, and open space study	1	2	3	4	5
18. Facilities located appropriately for the age groups anticipated to use them	1	2	3	4	5
19. Sites appropriate for uses desired	1	2	3	4	5
20. Knowledge and use of local, county and/or State grants	1	2	3	4	5

Comments _____

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Solid and Hazardous Waste

For:	1 - Outstanding 2 - Above Average 3 - Average 4 - Below Average 5 - Deficient
By:	
Date:	

A. Solid and Hazardous Waste

1. Reporting procedures	1	2	3	4	5
2. Resident satisfaction with service	1	2	3	4	5
3. Traffic/Dust/Noise/Odor	1	2	3	4	5
4. Further study	1	2	3	4	5

Comments _____

ACEC/PA Municipal Audit Program

Stormwater Facilities

For:	1 - Outstanding 2 - Above Average 3 - Average 4 - Below Average 5 - Deficient
By:	
Date:	

A. Street Drainage

1. New street designs conform to acceptable industry standards for surface and subsurface drainage	1	2	3	4	5
2. New pipe and inlet capacities required to carry at least a 10 year storm	1	2	3	4	5
3. Proper cross-slopes provided on both newly constructed and resurfaced streets	1	2	3	4	5
4. Drainage facilities inspected and cleaned at least once per year	1	2	3	4	5
5. Accurate inventory of drainage facilities, including type, size location, capacity, design year and condition	1	2	3	4	5
6. Driveway cross drains being maintained	1	2	3	4	5

Comments _____

B. Ponds and Swales

1. Planned program to periodically cut shoulders and clean parallel swales	1	2	3	4	5
2. Stormwater ponds cleaned on a regular basis	1	2	3	4	5
3. Embankment checked annually for settlement or burrowing animal activity	1	2	3	4	5
4. Outlet structures cleaned periodically	1	2	3	4	5
5. Outlet pipes checked for scour	1	2	3	4	5
6. Pipes checked annually for rust or other deterioration	1	2	3	4	5
7. Ponds checked during a rainfall event for capacity	1	2	3	4	5
8. Emergency spillways open and maintained	1	2	3	4	5
9. Maintenance bonds or other financial guarantees in place	1	2	3	4	5

Comments _____

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ACEC/PA Municipal Audit Program

Roads/Traffic/Transportation

For:	1 - Outstanding 2 - Above Average 3 - Average 4 - Below Average 5 - Deficient
By:	
Date:	

A. Pavement

1. Annual resurfacing/planned maintenance program	1	2	3	4	5
2. Pavement maintenance funds allocated on a needs basis	1	2	3	4	5
3. Pavements inspected and evaluated once a year	1	2	3	4	5
4. Industry standards followed (PennDOT, APWA, AASHTO) in materials and methods of pavement maintenance	1	2	3	4	5
5. Pavement Management System (PMS) in place and utilized	1	2	3	4	5
6. Capital improvement program for major street reconstruction projects	1	2	3	4	5
7. New pavements structurally designed for anticipated traffic loads and minimum depth standards	1	2	3	4	5
8. Traffic counts recorded periodically on all major municipal streets	1	2	3	4	5
9. Sufficient manpower, equipment and expertise to perform maintenance and repair functions in a timely manner	1	2	3	4	5

Comments _____

B. Street Drainage

1. New designs conform to accepted industry standards for surface and subsurface drainage	1	2	3	4	5
2. New pipes and inlets have capacity for minimum 10 year storm	1	2	3	4	5
3. Proper cross-slopes on newly constructed and resurfaced streets	1	2	3	4	5
4. Drainage facilities inspected and cleaned at least once per year	1	2	3	4	5
5. Planned program to periodically cut shoulders and clean parallel swales	1	2	3	4	5
6. Accurate inventory of drainage facilities: type, size, location, capacity, design year, and condition	1	2	3	4	5

Comments _____

C. Pavement Markings

1. Pavement markings conform with the MUTCD and PennDOT regulations	1	2	3	4	5
2. Line stripes repainted annually	1	2	3	4	5
3. Planned program to review pavement markings for visibility and adequacy	1	2	3	4	5
4. Inventory of the location and type of pavement markings	1	2	3	4	5

Comments _____

D. Signs

1. Type, size, location and installation of signs conform with the MUTCD and PennDOT regulations	1	2	3	4	5
2. Traffic studies for new signs performed by a qualified person in accordance with Pennsylvania regulations	1	2	3	4	5
3. Signs reviewed for removal of inappropriate and non-effective signs	1	2	3	4	5
4. Signs periodically checked for reflectivity and visibility, and replaced if necessary	1	2	3	4	5
5. Inventory of the type, size, location and installation date of all authorized signs	1	2	3	4	5

Comments _____

E. Guide Rail

1. Roads periodically reviewed for locations of need for guide rail	1	2	3	4	5
2. Guide rail located and installed in accordance with PennDOT criteria	1	2	3	4	5
3. Procedure established to mobilize materials and equipment for timely repair of guide rail damage	1	2	3	4	5
4. Inventory of type and location of guide rail, including end treatments	1	2	3	4	5

Comments _____

F. Winter Maintenance

1. Planned and scheduled procedure is followed to prepare for winter season	1	2	3	4	5
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2. Priorities of streets established and published for residents	1	2	3	4	5
3. Routes and territories established and documented for each piece of equipment and operator	1	2	3	4	5
4. Command center, with telephone communications from the public and radio communications to equipment operators	1	2	3	4	5
5. Materials stockpiled in an environmentally sound manner, at strategic locations	1	2	3	4	5
6. Schedule and procedure to stockpile an adequate supply of material and re-order to maintain stockpiles	1	2	3	4	5
7. Procedures established and executed for mobilizing contract equipment, for routine and emergency purposes	1	2	3	4	5
8. All streets swept of anti-skid material each spring	1	2	3	4	5
9. Snow emergency ordinance and a plan for implementation	1	2	3	4	5

Comments_____

G. Roadside Maintenance

1. Periodic roadside mowing throughout the growing season	1	2	3	4	5
2. Roadside areas inspected and cleared of excess vegetation at least annually	1	2	3	4	5
3. Erosion controlled and washouts repaired within rights-of-way	1	2	3	4	5
4. Ordinance restricts new tree plantings within the rights-of-way	1	2	3	4	5
5. Program to remove roadside debris and litter	1	2	3	4	5

Comments_____

H. Traffic Signals

1. Traffic signals conform with approved Signal Permit Plan and with PennDOT criteria	1	2	3	4	5
2. Signals maintained in accordance with PennDOT Traffic Signal Maintenance procedures	1	2	3	4	5
3. Traffic signal operations coordinated for efficient traffic flow	1	2	3	4	5
4. Contingency plan to control traffic in event of signal failure or malfunction	1	2	3	4	5

Comments _____

I. Bridges

1. Inventory of type, size, location, and condition of each bridge	1	2	3	4	5
2. Bridges inspected by qualified personnel in accordance with NBIS standards	1	2	3	4	5
3. Program to respond to recommendations from bridge inspection reports	1	2	3	4	5
4. Bridges maintained and upgraded to avoid weight posting	1	2	3	4	5
5. Funds allocated for needed rehabilitation and replacement projects	1	2	3	4	5

Comments _____

J. Safety

1. System to maintain and review accident records	1	2	3	4	5
2. Program to identify and improve high accident locations	1	2	3	4	5

and substandard conditions					
3. Municipal forces trained and operating in accordance with PennDOT Publication 203	1	2	3	4	5
4. Contingency plan for response to emergency situations on municipal streets	1	2	3	4	5
5. Street design conforms with PennDOT/AASHTO criteria in lane width, sight distance, geometrics, etc.	1	2	3	4	5

Comments _____

K. Pedestrian/Bicycle Facilities

1. Development design required to accommodate pedestrian and bicycle movement	1	2	3	4	5
2. Ordinance in place and enforced for sidewalk repairs by property owners	1	2	3	4	5
3. Comprehensive Plan component addresses pedestrian and bicycle circulation	1	2	3	4	5

Comments _____

L. Parking

1. Adequate off-street parking required by ordinance for new developments	1	2	3	4	5
2. Adequate off-street parking to serve present land uses	1	2	3	4	5

Comments _____

ACEC/PA Municipal Audit Program

Wastewater Systems

For:	1 - Outstanding 2 - Above Average 3 - Average 4 - Below Average 5 - Deficient
By:	
Date:	

A. Organization and Management

1. Business plan	1	2	3	4	5
2. Compliance with governmental regulations	1	2	3	4	5
3. Financial records	1	2	3	4	5
4. Revenues sufficient to satisfy debt, operating and maintenance expenses and provide reserves	1	2	3	4	5
5. Adherence to annual operating budget	1	2	3	4	5
6. Rates and charges reviewed	1	2	3	4	5
7. Number of State certified operators and SEO's	1	2	3	4	5
8. Management and administrative staff	1	2	3	4	5
9. Operating and maintenance manual	1	2	3	4	5
10. Facility records and maps	1	2	3	4	5
11. Operating records and reports	1	2	3	4	5
12. Standard facility specifications, rules, and regulations	1	2	3	4	5
13. Customer service	1	2	3	4	5

14. Capital improvement program	1	2	3	4	5
15. Staff training	1	2	3	4	5
16. Established EDU figure for non-metered sources	1	2	3	4	5
17. Records of permitted private facilities	1	2	3	4	5
18. Emergency procedures and policy	1	2	3	4	5
19. Safety procedures and policy	1	2	3	4	5

Comments _____

B. Source Contributors and Comprehensive Planning

1. Maps/documents that define users by subareas or municipal boundaries	1	2	3	4	5
2. Intermunicipal agreements	1	2	3	4	5
3. Act 537 sewage facilities plan	1	2	3	4	5
4. Wasteload management report content/methodology	1	2	3	4	5
5. Industrial pretreatment program	1	2	3	4	5

Comments _____

C. Wastewater Flows

1. Historical flow records	1	2	3	4	5
Historic and projected flow records for:					
2. Individual discharge categories (domestic/commercial/ industrial)	1	2	3	4	5
3. Inflow/infiltration	1	2	3	4	5
4. Average daily flow	1	2	3	4	5
5. Maximum daily flow	1	2	3	4	5

6. Methodology used in the waste load management report to project 5 year flow	1	2	3	4	5
7. Ability to identify flow for each major subsystem	1	2	3	4	5
8. Flow audit and I&I detection program	1	2	3	4	5
9. I&I industry standard is less than 20% of average daily flow	1	2	3	4	5
10. I&I repair frequency	1	2	3	4	5
11. Accuracy of metered sources	1	2	3	4	5
12. Monitoring individual large contributor's flows against agreements	1	2	3	4	5

Comments_____

D. Wastewater Quality and Treatment

1. Monitoring and documentation of wastewater quality	1	2	3	4	5
2. Monitoring of groundwater quality	1	2	3	4	5
3. Sampling and testing facilities	1	2	3	4	5
4. Treatment facilities (type and capacity)	1	2	3	4	5
5. Treatment compliance with all governmental regulations	1	2	3	4	5
6. Sludge treatment and disposal	1	2	3	4	5
7. Disinfection	1	2	3	4	5

Comments_____

E. Pumping and Transmission

1. Pumping capacity (consider with largest pump out of service)	1	2	3	4	5
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2. Monitoring, control, and alarm features	1	2	3	4	5
3. Availability of spare pumps and parts	1	2	3	4	5
4. Storage is available for extended power failures	1	2	3	4	5
5. Emergency power (availability and reliability)	1	2	3	4	5
6. Metering	1	2	3	4	5
7. Force mains	1	2	3	4	5
8. Energy conservation program	1	2	3	4	5
9. Electrical systems	1	2	3	4	5
10. HVAC systems	1	2	3	4	5
11. Pump station drawings and records	1	2	3	4	5

Comments _____

F. Collection System (Gravity)

1. Mains	1	2	3	4	5
2. Interceptors	1	2	3	4	5
3. System map	1	2	3	4	5
4. Standards for new construction	1	2	3	4	5
5. Internal inspection program	1	2	3	4	5
6. Manholes	1	2	3	4	5
7. Service laterals and appurtenance	1	2	3	4	5
8. Standards for lateral construction	1	2	3	4	5
9. Cleanouts	1	2	3	4	5

Comments _____

ACEC/PA Municipal Audit Program

Water Systems

For:	1 - Outstanding 2 - Above Average 3 - Average 4 - Below Average 5 - Deficient
By:	
Date:	

A. Water Demands

1. Historical demands are properly recorded	1	2	3	4	5
2. Historical and projected demands are broken down sufficiently to identify the following:					
Individual consumption categories	1	2	3	4	5
Unaccounted-for water	1	2	3	4	5
Average daily demand	1	2	3	4	5
Maximum daily demand	1	2	3	4	5
System demands are projected at least 5 years into the future	1	2	3	4	5
Understand demand criteria for each system component	1	2	3	4	5
Appropriate water audit and leak detection program	1	2	3	4	5
Lost (non-revenue) water is less than 15%	1	2	3	4	5
Leak repair measures	1	2	3	4	5
Water system conservation measures	1	2	3	4	5

Comments _____

B. Source of Supply Capacity

1. All sources are metered	1	2	3	4	5
2. Know safe (drought) yield of each source	1	2	3	4	5
3. Source physical conditions	1	2	3	4	5
4. Overall source reliability	1	2	3	4	5
5. Safe yield adequate for 5+ years	1	2	3	4	5
6. Dams meet all safety requirements	1	2	3	4	5
7. Needed new source development underway	1	2	3	4	5
8. Sufficient interconnections with adjoining water systems	1	2	3	4	5

Comments _____

C. Water Quality and Treatment

1. Water quality conditions are monitored and documented	1	2	3	4	5
2. Sanitary surveys conducted for all existing and potential sources	1	2	3	4	5
3. Sources provide high quality raw water	1	2	3	4	5
4. Sources well protected from contamination	1	2	3	4	5
5. Adequate treatment (type and capacity) provided for each source	1	2	3	4	5
6. Treatment satisfies all State and Federal regulations	1	2	3	4	5
7. Finished water is always safe and palatable	1	2	3	4	5
8. Adequate disinfection contact time is provided before customer use	1	2	3	4	5

Comments _____

D. Pumping and Storage

1. Pumping capacity is adequate with largest pump out of service	1	2	3	4	5
2. Pumping stations contain sufficient monitoring, control and alarm features	1	2	3	4	5
3. Spare pumps and parts are readily available	1	2	3	4	5
4. Adequate service can be maintained during extended power failures	1	2	3	4	5
5. All pumping facilities are metered	1	2	3	4	5
6. Effective portion of total storage capacity has been established	1	2	3	4	5
7. Storage that controls system pressure is at an appropriate elevation	1	2	3	4	5
8. Required system fire demands and duration have been established	1	2	3	4	5
9. Effective storage capacity satisfies operating, fire and emergency requirements	1	2	3	4	5

Comments _____

E. Distribution Network

1. Normal service pressures are not below 30 psi	1	2	3	4	5
2. Customers with service pressures greater than 80 psi use pressure reducing valves	1	2	3	4	5
3. Network does not contain excessive number of closed valves or in-main regulating valves	1	2	3	4	5

4. Water mains are adequately sized	1	2	3	4	5
5. Water mains are internally clean and free-flowing	1	2	3	4	5
6. Water main materials are not subject to undue breakage	1	2	3	4	5
7. Network of mains is free of dead ends and is properly looped	1	2	3	4	5
8. Network includes sufficient valves, blowoffs, air releases, hydrants, etc.	1	2	3	4	5
9. Distribution appurtenances are in good operating condition	1	2	3	4	5
10. Hydrants are flushed semi-annually	1	2	3	4	5
11. Valves are exercised annually	1	2	3	4	5
12. Adequate fire flow service is provided in all areas served	1	2	3	4	5

Comments _____

F. Customer Facilities

1. Service lines, meters and appurtenances are correctly sized and positioned	1	2	3	4	5
2. Facilities use AWWA approved materials	1	2	3	4	5
3. Backflow prevention devices satisfy DER guidelines	1	2	3	4	5
4. Customer meters are accurate and are tested and/or replaced regularly	1	2	3	4	5
5. No cross-connections exist, including connections with unpermitted sources	1	2	3	4	5

Comments _____

G. Organization and Management

1. System maintains Business Plan addressing physical, operational, managerial and financial viability issues	1	2	3	4	5
2. System holds all required permits	1	2	3	4	5
3. System complies with all Federal, State and local regulations	1	2	3	4	5
4. Maintain detailed records of revenues and expense	1	2	3	4	5
5. Revenues sufficient to satisfy debt, operating and maintenance expenses and provide reserves	1	2	3	4	5
6. System maintains and follows annual operating budget	1	2	3	4	5
7. Rates and charges are reviewed and adjusted annually	1	2	3	4	5
8. System operated by adequate number of State certified operators	1	2	3	4	5
9. Capable management and administrative staff	1	2	3	4	5
10. System maintains DER-approved Operating and Maintenance Manual	1	2	3	4	5
11. Facility records and maps are comprehensive and up-to-date	1	2	3	4	5
12. Operating records and reports are comprehensive and up-to-date	1	2	3	4	5
13. System maintains Rule and Regulations and standard facility specifications	1	2	3	4	5
14. Sufficient customer information and educational procedures	1	2	3	4	5
15. System sustains minimum 5-year capital improvement program	1	2	3	4	5
16. Cooperative working relationships with water systems	1	2	3	4	5
17. Staff maintains knowledge of industry activities and technologies	1	2	3	4	5

Comments _____