Note: These capacity assessment worksheets are provided to assist facilities in meeting the requirements of Section 5(b) of Chapter 22, Capacity Development Standards for Public Water Systems, but are not part of the chapter.

Capacity Assessment Worksheets for Public Water Systems to Demonstrate Capacity Development

Department of Environmental Quality
Water Quality Division
August, 1999

For assistance with these worksheets please call
DEQ/WQD State Revolving Fund Section at (307) 777-7781

Introduction

Wyoming State Statute W.S. 16-1-303(e) requires all new or modified community and noncommunity nontransient water systems commencing operations after October 1, 1999 to demonstrate Capacity Development. Capacity Development covers three areas:

> ***Technical capability*** - the physical infrastructure of the water system, including but not limited to the source water adequacy, infrastructure adequacy, and technical knowledge. In other words, does your treatment system work the way it is supposed to? Are you providing the safest and cleanest water possible and required by law to your customers right now, and will you be able to in the future?
>
> ***Managerial capability*** - the management structure of the water system, including but not limited to ownership accountability, staffing and organization, and effective linkages. In simpler terms, do you have a capable and trained staff? Do you have an effective management structure?
>
> ***Financial capability*** - the financial resources of the water system, including but not limited to the revenue sufficiency, credit worthiness, and fiscal controls. Basically, does your system have a budget and enough revenue coming in to cover costs, repairs, and replacements?

If it is determined that your system does NOT have the required capability(s), the goal of this program is to move your system towards attaining the required capability(s). If you have questions concerning Capacity Development please call our office at **(307) 777-7781**, and we will be happy to help.
After Department of Environmental Quality/Water Quality Division (DEQ) receives these worksheets, we will be studying them and other information located in our files to make a determination whether or not your public water system has demonstrated Capacity Development. A final report will be available upon completion of the analysis.

Applicant:	
PWS Number:	
Prepared by:	
(include title)	
Address:	
City, State, Zip:	
Telephone:	
Date:	

The Managerial Portion of your System

This portion applies to all new or modified community and nontransient noncommunity water systems. To be completed by individuals responsible for facility management, e.g. Public Works Director, City Engineer, Council, Board, Owner, etc. Please mark (X) the appropriate box: Y*es*, *No*, or *Unknown* for each question. Please try to determine the answer to every question. ***If a question or section does not apply to your system, please write NA next to the question or section for not applicable. If additional space is needed please attach additional sheet(s) and refer to number***

Operation & Maintenance			
Operations Staff	**Yes**	**No**	**Unknown**
1. Do the persons operating your system have current water treatment plant and water distribution operator certification credentials from DEQ? ***If yes, list operators & classifications:*** _____ _____	__	__	__
2. Do your operators receive training on an ongoing basis to keep current on new developments in the field?	__	__	__
Future Operational Demands	**Yes**	**No**	**Unknown**
3. Does your water system obtain any regular or occasional technical assistance from outside sources, such as DEQ, your engineer, other utilities or organizations specifically dedicated to providing technical assistance? ***If yes, who***: _____ _____	__	__	__
Management & Administration			
Who's in Charge?	**Yes**	**No**	**Unknown**
4. Is there a clear plan of organization and control for management and operation of the system? If yes please attach appropriate documentation.	__	__	__
5. Are the limits of the operators' authority clearly defined?	__	__	__
6. Are all the specific functional areas of operations and management assigned?	__	__	__
7. Does everyone involved in operations know who is responsible for each area?	__	__	__
8. Is someone responsible for scheduling work? Who_____	__	__	__
Rules and Standards	**Yes**	**No**	**Unknown**
9. Do you have rules governing new hook-ups?	__	__	__
10. Do you have a water main extension policy?	__	__	__
11. Do you have standard construction specifications to be followed?	__	__	__
12. Do you have measures to assure cross-connection control and backflow prevention?	__	__	__

13. Do you have policies or rules describing customer rights and responsibilities?	__	__	__
Regulatory Compliance Program	**Yes**	**No**	**Unknown**
14. Do you have approved SDWA monitoring/reporting requirements?	__	__	__
15. Do you satisfy reporting requirements?	__	__	__
16. Do you know how to obtain the most recent information on regulatory requirements?	__	__	__
17. Do you know how to obtain an explanation of requirements?	__	__	__
18. Do you maintain bacteriological records for five years and chemical records for 10 years?	__	__	__
19. Do you know what to do in the event of a violation?	__	__	__
Emergencies	**Yes**	**No**	**Unknown**
20. Do you have an Emergency Response Plan? If yes, please attach.	__	__	__
21. Does everyone involved in operations know what they are to do in the event of contamination from a toxic hazardous waste spill in your source water or a main break or a tank failure?	__	__	__
22. Do you have a chain-of-command protocol for emergency action?	__	__	__
23. Is someone responsible for emergency operations, for communications with regulators, for customer relations, for media relations? ***If yes, who (title):*** _____	__	__	__
Safety	**Yes**	**No**	**Unknown**
24. Do you have a safety program defining measures to be taken if someone is injured? If yes, please attach.	__	__	__
25. Do operators understand the risks and safety measures involved in handling water treatment chemicals?	__	__	__
26. Do you have written operating procedures for both routine and emergency system operations? If yes, please attach.	__	__	__
27. Are you fully aware of Occupational Safety and Health Administration (OSHA) confined space (such as trenches/manholes) regulations?	__	__	__
Maintenance	**Yes**	**No**	**Unknown**
28. Do you have a planned maintenance management system -- a system for scheduling routine preventive maintenance?	__	__	__
29. Do you have a system for assuring adequate inventory of essential spare parts and back-up equipment? If yes, please describe. _____ _____	__	__	__

30. Do you have relationships with contractors and equipment vendors to assure prompt priority service?	__	__	__
31. Do you have records and data management systems for system operating and maintenance data, for regulatory compliance data, and for system management and administration?	__	__	__
Management Capability	**Yes**	**No**	**Unknown**
32. Do you receive outside services and technical assistance you need?	__	__	__
33. Do you have adequate legal counsel, insurance, engineering advice, technical/operations assistance and financial advice?	__	__	__

The Financial Portion of your System

This portion applies to all new or modified community and nontransient noncommunity water systems. To be completed by individuals responsible for facility finances, e.g. public works director, city engineer, clerks, council, board, owner, etc. Please mark (X) the appropriate box: Y*es*, *No*, or *Unknown* for each question. Please try to determine the answer to every question. ***If a question or section does not apply to your system, please write NA next to question or section for not applicable.***

Financial Planning Mechanisms	**Yes**	**No**	**Unknown**
34. Do you have an annual budget?	__	__	__
35. Do you have within the annual budget a separate reserve account for equipment replacement and/or capital improvement?	__	__	__
36. Do you have a capital budget or capital improvement plan that projects future capital investment needs some distance (at least four years) into the future?	__	__	__
37. Do you have a process to schedule and commit to capital projects?	__	__	__
38. Does your long-term planning incorporate analysis of alternative strategies that might offer cost saving to customers, such as consolidation with other nearby systems or sharing of operations and management expenses with other nearby systems?	__	__	__
Rates/Billing	**Yes**	**No**	**Unknown**
39. Do you regularly review your rates? ***How often?*** _____	__	__	__
40. Do you have a plan in place for periodic rate increases?	__	__	__
41. Is the rate structure based on metered watered use? ***List water rates per 1000 gallons or attach rate schedule:*** _____ _____	__	__	__
42. Do users pay a higher rate per 1000 gallons as they use more water?	__	__	__
43. Do you have procedures for billing and collection?	__	__	__
44. Is your billing collection rate greater than 95%?	__	__	__
45. Do you have collection procedures for delinquent accounts?	__	__	__

Financial Planning Mechanisms - Are they Adequate?	**Yes**	**No**	**Unknown**
46. Do you have audited financial statements?	__	__	__
47. Does your water system presently operate at least on a break-even basis?	__	__	__
48. Does the water system keep all the water revenues (i.e., water revenue does not support other municipal departments or unrelated activities)?	__	__	__
49. Do you employ standardized accounting and tracking systems?	__	__	__
50. Please describe accounting system(s), e.g. GAAP, manual book entry, software program _____ _____			
51. Do you keep records to substantiate depreciation of fixed assets and accounting for reserve funds?	__	__	__
52. Are financial management record keeping systems organized?	__	__	__
53. Are controls exercised over expenditures?	__	__	__
54. Are controls exercised to keep from exceeding your budget?	__	__	__
55. Are there purchasing procedures?	__	__	__

Financial Spreadsheet

56. Please complete the financial spreadsheet

5 YR. Projections	Last Year	Current Year	Year 2 Est.	Year 3 Est.	Year 4 Est.	Year 5 Est.
1. Beginning Cash on Hand	_____	_____	_____	_____	_____	_____
2. Operating revenues (see 13)	_____	_____	_____	_____	_____	_____
3. Other receipts	_____	_____	_____	_____	_____	_____
4. Total Available Cash (1+2+3)	_____	_____	_____	_____	_____	_____
5. O&M and Replace. Expenses	_____	_____	_____	_____	_____	_____
6. Debt Service	_____	_____	_____	_____	_____	_____
7. Capital Improvements	_____	_____	_____	_____	_____	_____
8. Other Expenses	_____	_____	_____	_____	_____	_____
9. Total Cash Paid (5+6+7+8)	_____	_____	_____	_____	_____	_____
10. Next Year's Begin. Cash (4-9)	_____	_____	_____	_____	_____	_____
11. Number of Customer Accounts	_____	_____	_____	_____	_____	_____
12. Average annual Account Charge	_____	_____	_____	_____	_____	_____
13. Operating Revenue (11X12)	_____	_____	_____	_____	_____	_____

The Technical Portion of your System

For existing water systems the technical capacity development assessment may be performed by completing the NEW WATER SYSTEM TECHNICAL CAPACITY WORKSHEET or by providing a copy of the most recent sanitary survey along with an action plan and schedule to address any deficiencies identified by the division in the sanitary survey.
For new water systems the "**NEW WATER SYSTEM TECHNICAL CAPACITY WORKSHEET**" needs to be completed to assess technical capacity.

NEW WATER SYSTEM TECHNICAL CAPACITY WORKSHEET

The Technical Portion of Your System-For New Water Systems

To be completed by individuals responsible for facility operation, e.g. Public works director, city engineer, council, board, owner. Please mark (X) the appropriate box: *Yes, No,* or *Unknown* for each section. Please try to determine the answer to every question. ***If a section or question does not apply to your system, please write NA next to the section or question for not applicable.***

Water Supply and Existing Demands	**Yes**	**No**	**Unknown**
57. Do you know your estimated average daily demand? Amount: _____	__	__	__
58.Do you know your maximum daily demand? Amount: _____	__	__	__
59. Do you know the maximum amount of water you can deliver from your source? Amount: _____	__	__	__
60. Is your source capacity higher than your maximum daily demand? Percentage higher or lower: _____	__	__	__
61. Can you meet peak demand without pumping at peak capacity for extended periods?	__	__	__
62. Do you have an Emergency Response Plan that will allow you to meet system demand during a drought or shortage, such as the loss of the largest source? If yes, please attach.	__	__	__
Water Demand	**Yes**	**No**	**Unknown**
63. Do you know whether your system demands will be growing, declining or remaining stable over the next ten years? Please mark: __Growing, __Declining, or __Stable.	__	__	__
64. Does your source have additional water available for appropriation?	__	__	__
65. If you have large commercial, industrial, or irrigation users, do you know their long-term plans and understand their needs?	__	__	__
Purchased Water	**Yes**	**No**	**Unknown**
66. If you purchase water from another system or a wholesaler, do you know their long-term plans?	__	__	__
67. Do you have a contract to purchase water? ***If yes, with whom?*** _____	__	__	__
68. Do you know the terms affecting your supply during drought conditions?	__	__	__

Competing Uses of Water	**Yes**	**No**	**Unknown**
69. Do you know who the other users are and do you understand their future plans?	__	__	__
70. Do you fully understand your legal rights to the water?	__	__	__
71. Do you have a water right?	__	__	__
Alternative Sources	**Yes**	**No**	**Unknown**
72. Are alternative water sources possibly available to you?	__	__	__
73. Are you knowledgeable of the characteristics and costs of using alternative sources?	__	__	__
Water Source	**Yes**	**No**	**Unknown**
74. Do you know the depth of your well(s)? ***Depth(s):*** _____	__	__	__
75. Do you know the geologic name of the aquifer system from which your water is drawn?	__	__	__
If yes, geologic name: _____			
Treatment - Microbiological Contamination			
Is your system using surface water or ground water under the influence of surface water?			
yes _____	**no _____**	***(if you checked "no", skip to the next section - Ground Water Systems)***	
Surface Water Systems			
Filtration Plant Condition	**Yes**	**No**	**Unknown**
76. Are repair parts available?	__	__	__
77. Do you have redundancy (back-ups/automatic switch-overs) for all major mechanical units? If no, list units you do NOT have redundancy for: _____ _____	__	__	__
78. Do you have on-line continuous turbidimeters on each filter?	__	__	__
79. Have you adopted a turbidity goal lower than the standard?	__	__	__
80. Do you have the capability to add coagulant before the filter?	__	__	__
Ground Water Systems			
81. Is your Ground Water Under the Influence of Surface Water?	__	__	__
82. Is your water free from variations in turbidity and temperature after storm events?	__	__	__

Well Construction and Protection	Yes	No	Unknown
83. Is your well(s) constructed to current Wyoming regulations?	__	__	__
84. Do you have an approved wellhead/source water protection plan?	__	__	__
85. Is your wellhead finished with a pitless adapter that will prevent contamination from surface water?	__	__	__

Disinfection

Do you disinfect? yes ____ no____ (if "no", skip to the Infrastructure - Pumping section)

Disinfection	Yes	No	Unknown
86. Do you regularly inspect and maintain your disinfection/chlorination equipment?	__	__	__
Type of Equipment: _____ How often? _____ ***Disinfectant used:*** _____			
87. Do you have back-up equipment? ***Type:*** _____	__	__	__
88. Do you have adequate contact time following disinfection and before the first user in the distribution system? ***Contact time:*** _____	__	__	__
89. Can you detect a chlorine residual at taps at the ends of the distribution system? ***Free Chlorine Residual:*** _____	__	__	__

Disinfection By-Products

Treatment for the Control of Disinfection By-Products	Yes	No	Unknown
90. If you treat surface water, could you adopt "enhanced coagulation" in your current plant?	__	__	__
91. If you treat surface water, could you still meet current contact-time requirements if disinfection were not allowed before sedimentation?	__	__	__

Infrastructure - Pumping

Condition of Pumping Equipment	Yes	No	Unknown
92. Do you routinely inspect for signs of pump/motor problems? ***How often:*** _____	__	__	__
93. Do you hire a qualified pump contractor to perform an inspection of all pumping equipment, identify potential problems, and perform maintenance, on an annual basis? Explain_____	__	__	__

Standby/Emergency Power Equipment	**Yes**	**No**	**Unknown**
94. Is there sufficient standby/emergency power capacity to supply 100% of the average daily demand of the system (excluding fire demand)?	__	__	__
95. Are any existing standby/emergency power equipment, controls and switches tested or exercised routinely under load conditions, for at least 30 minutes at a time?	__	__	__
96. Has the local electric utility been made aware of the standby/emergency power provisions made by the water system, so that it can reinforce and safeguard the electrical facilities serving the water operations?	__	__	__
Infrastructure - Storage			
Storage Capacity	**Yes**	**No**	**Unknown**
97. Does the system have sufficient gravity-flow (non-pumped) or emergency generator-supported pumping capability to ensure adequate distribution storage to provide safe and adequate service for up to 24 hours without power? ***If no, how long:*** _____	__	__	__
98. Is there reserve capacity in the tank for fire protection support? *Amount:* _____	__	__	__
Security Measures	**Yes**	**No**	**Unknown**
99. Are all openings, such as vent pipes, screened to protect against the entrance of small animals, mosquitoes, flies and other small insects?	__	__	__
100. Is there an entry hatch to allow access for cleaning and painting of the interior of the tank?	__	__	__
101. Is your storage tank covered?	__	__	__
102. Is the tank and the immediate surrounding area fenced?	__	__	__
Control Systems	**Yes**	**No**	**Unknown**
103. Is there a high/water level signal system to control the pumps?	__	__	__
104. Is there an altitude valve, to preclude the tank from overflowing?	__	__	__
105. Is there a drain valve or hydrant to allow for draining of the tank?	__	__	__
106. Is there an approved method for draining the tank, including any required discharge permits? *If yes, list Surface Water Discharge permit number:* _____	__	__	__
Tank Maintenance	**Yes**	**No**	**Unknown**
107. Will the tank be inspected at least every five years by a qualified tank contractor for evidence of corrosion or pitting, leakage, and structural weakness?	__	__	__

Infrastructure - Distribution			
System Maintenance	**Yes**	**No**	**Unknown**
108. Will the operator routinely flush, test, and maintain the hydrants in the system? **How often: _____**	__	__	__
109. Are the locations of valves in the mains and curb stops on the service lines precisely known?	__	__	__
110. Will the system keep a log of distribution system breaks to identify weak areas in the system?	__	__	__
111. Are locations, size, and type of mains and service lines detailed on records in a secure area?	__	__	__
112. Will all valves be exercised and lubricated periodically?	__	__	__
113. Will an O&M manual be developed for the systems?	__	__	__
114. Will meter pits, pressure regulating valves, altitude valves, blow-offs, and other appurtenances be maintained on a regular basis?	__	__	__
Water Quality in Distribution System	**Yes**	**No**	**Unknown**
115. Is there a program for installing and testing backflow prevention devices where potential contamination is present?	__	__	__
116. Is there a program to eliminate "dead-ends" in the mains, where feasible?	__	__	__
Construction Standards	**Yes**	**No**	**Unknown**
117. Are there suitable rights-of-way and easements provided to the water system for expansion, maintenance, and replacement of mains and services?	__	__	__
118. Is there sufficient earth cover to protect the mains from frost damage or heavy loads, if driven over?	__	__	__
119. Are materials of mains designed and selected to resist corrosion, electrolysis, and deterioration?	__	__	__
120. Can you maintain adequate pressure in the distribution system under all conditions of flow?	__	__	__
121. Are you familiar with Wyoming Water Quality Rules and Regulations Chapters 3 and 12 for construction permitting?	__	__	__