Texas Agricultural Extension Service

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COMPUTER SELECTION AND USE FOR RURAL WATER SYSTEMS[1]

Mike D. Woods*

Mailing utility bills on time is a major concern of all water supply corporations or systems. Preparing required reports or analyzing records and data for future planning are also important activities. As more and more people move into Texas, the data processing abilities of rural communities and municipalities become even more important. Computer systems are frequently viewed as a solution to these greater demands for data processing. A computer may or may not be the answer for a particular organization. This report covers selecting a computer system and describes how a computer might be used by a water supply corporation or system.

Successfully Using a Computer System

A common use of computers for water systems is utility billing. Accuracy and speed are key elements required of the computer for this function. A possible sequence of events related to computerized utility billing might be similar to the following:

- A print-out (listing) of customers is provided by the computer for meter readers. The route sheet would list customers in routed order.
- Water consumption readings are made by meter readers.
- All meter readings are transferred to the ledger which is stored in the computer. A 10-key pad on the computer terminal allows rapid data entry by route without reference to accounts.
- Bills are calculated by the computer.
- Bills are prepared by the computer for mailing. They can be sorted by route or zip code for cost saving through bulk mailing. Also, individual or bulk messages to customers can be included on the billing statement.

Program features to consider include the calculating of averages (for unusual occurrences such as a misread meter); ability to change the rate structure; ability for multi-rate structures; and flagging of unusually high or low water consumption. The computer program should allow the staff to view individual customer files and usage history. An additional feature is the presentation of customer usage totals by route or pump station for water loss determination.

Once a water system has mastered the utility billing process on a computer, consider other use options. An inventory of parts, tools and equipment is one possibility. Calculating the water used per pump station for water loss determination is another use. User specific information can also be easily retrieved if the data base exists. For example, information on all rent accounts might be accessed to answer specific questions. Of course, bookkeeping functions such as payroll or purchasing may also be useful. Specialized software such as a data base management system may allow this type of record-keeping and analysis. There are also many word processing packages for letter writing and other office functions to evaluate. If these or other functions are important, then the computer system selected will depend on specific tasks to be performed.

Selecting a Computer System

The following discussion presents some points to consider in converting to a computerized system of billing and record-keeping. There are few hard and fast rules—the key is to do as much homework as possible before selecting a computer and software.

Selecting a Consultant. Not all water supply systems are able to hire outside help for the computer selection process. Certainly, unbiased viewpoints are helpful to answer questions such as: Do we really need a computer? If so, which one? The system manager or board members may have to do much of their own homework when faced with budget constraints. The idea is to find individuals or consultants with both computer experience and water system knowledge who can objectively assess the

costs and benefits of conversion to computer use. Member systems of state rural water associations may be important references for good computer systems.

Scheduling Computer Conversion Activities. Set up a time-table or schedule at the first planning meeting in which computer conversion is considered. Exact dates may be changed but scheduling in advance has two major advantages. First, scheduling avoids "dragging out" the process. If goals are set, managers, staff members and board members are more likely to give adequate time and attention to the project. Secondly, by scheduling all future activities, interested parties are kept informed of the computer search process.

Conducting the Needs Study. The key to selecting the right computer is to know the tasks expected of the computer. Major uses might include billing, payroll, inventory of equipment and other capital items, meter locations and word processing. Be very specific about the tasks to be performed with the computer. Keep in mind you are concerned with current and future needs as growth occurs. By conducting this system-wide needs assessment, staff and board members are informed of key considerations. This is also an opportunity to reduce staff concern over converting to the computer, and it helps determine if a genuine need for computer processing really exists.

If the needs study is done thoroughly, the next step is to find computer software (programs/instructions to make the computer run) that accomplishes the tasks you want done.

Preparing Specifications. Tell vendors what tasks you wish to automate and what you expect from the vendor. Specifications should cover the following:

Hardware—Physical part of a computer system.
- CPU (central processing unit; the "brains of the computer)
- Storage (diskette system or other means to store data)
- Input Devices (keyboards, terminals or video display units)
- Output Devices (printers—many choices of speed and quality)

Software—Written instructions to the computer to produce desired calculations and other functions.

Be sure to consider ease of use, availability and quality of operating instruction manuals.

Services. Consider the following items regarding service:
- Delivery and installation of system
- Training and support during conversion to computer use
- Maintenance of hardware/software system

Vendor Demonstrations. Assuming some vendor proposals are satisfactory, the next step is to schedule and conduct vendor demonstrations. Seeing a system actually performing the desired tasks is one of the best evaluation tools. It may be wise to identify at least two vendors so the water system retains some leverage in the negotiation process. Most vendors will provide references of existing customers. Ask for these references and check them out. Evaluating other water systems can reveal much about the quality of the computer system and the service.

The final step includes preparing a contract for the selected hardware and software system. The contract describes the job to be done and the associated costs.

Some additional ideas you may want to consider as you shop for a computer system include:

Computers Have Limits. The computer can do many jobs, but incorporating additional tasks may require more programming and involve additional costs. Also, clean up your manual system of accounting before computerizing. The computer is fast and accurate. If you have inaccurate numbers to begin with, you will be making mistakes much faster.

Employee Attitudes. Remember the human factor when planning. Include training and information for those who will be using the system. The more comfortable your employees and staff are with computers, the greater are the chances of success.

Service. An extremely important consideration in determining which system to purchase is that of service. Obviously, do not buy a system which is expensive to maintain and which might remain unusable while a part or serviceman is in route.

One of the most important questions to ask is that of service turnaround time, including *where* and *how fast* service is performed. This item can be especially important when relying on one system for billing. What are you going to do if the system breaks down just before billing close-out and you are forced to "wait it out" without being able to go to a back-up plan?

As you discuss training with the software and/or hardware vendor be specific about who is to receive training. Where will the training be conducted and how long will it last? Think of these and any other questions as you search for the right computer. There is no "dumb" or insignificant question. The more you study the issue and do your homework, the better prepared you will be when the computer arrives at your office.

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