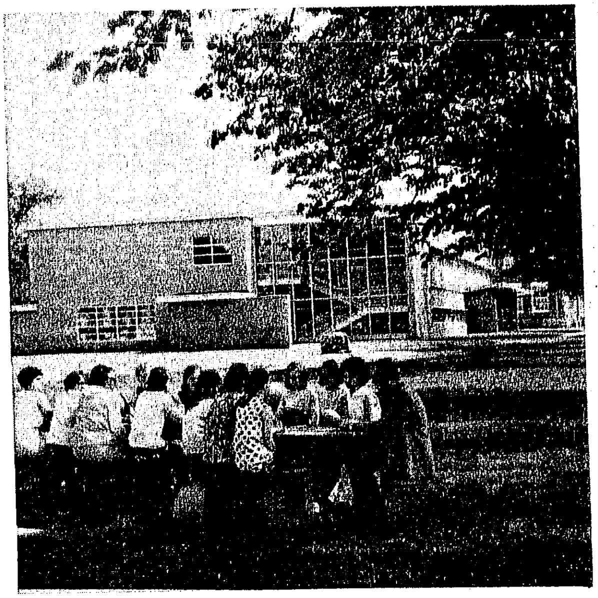


COMMUNITY FACILITIES

COMMUNITY FACILITIES AND SERVICES PLAN

PUBLIC BUILDINGS AND SPACES

Purpose

Guttenberg is a growing community with an increasing demand for the various community facilities and services. Although the school district, semi-public and private organizations provide some of these facilities and services, most are provided by the municipality. But, regardless of who provides the facilities and services, each plays a role in community planning, thus making an awareness of their general location, adequacy and anticipated future needs is essential.

The condition of existing facilities and a forecast of Guttenberg's future needs form the basis of this plan. The forecast recognizes that even without a population increase, an increase in demand for facilities and services can be expected from within the existing population level. Thus, both community growth and demand for a higher standard of living will function together with present needs to require more and better facilities and services.

Purpose of this plan is to recommend the improvements that are now necessary--or will become necessary--to adequately serve the present and future population of Guttenberg.

Municipal Building

The Guttenberg Municipal Building, completed in 1939 at First and Herder Streets, is a sound structure with adequate space to meet the immediately foreseeable needs. The 84-by-66 foot building and its 22-by-40 foot addition house all basic municipal administrative functions,including the Council Chamber, the City Manager and the City Clerk's Offices, and police and fire stations. The top floor of the building includes a municipal auditorium and Legion Hall with a small dining room. The basement includes a meeting-dining room capable of accommodating about 300 persons. The meeting-dining room is available on a rental basis for use by private groups and organizations.

As funds become available later in the planning period (1970-1990), interior remodeling of the Municipal Building should be undertaken to re-allocate use of some space and modernize and replace some fixtures and furnishings. Library expansion within the present building, as recommended under the subsequent library section, should be accomplished as part of the re-allocation of space. At the present time the city is in the process of acquiring an older building for the fire station. Moving the fire station will pave the way to remodeling the Municipal Building. The remodeling also should make provision for a mayor's office, and additional provision for an enlarged police department office area.

Although the building occupies most of the surface of the lot on which it is located, it is recommended that additional landscaping be provided in the small pockets available along the building.

As part of the city's long-range program, provision also should be made for a small off-street parking lot (15 to 30 spaces) adjacent to the Municipal Building or in the immediate vicinity.

Fire Station

As previously mentioned, the fire station is a part of the Municipal Building located at First and Herder Streets. A single room of approximately 45 by 25 feet, the station is situated well to serve the community and presently offers a fair amount of space to the Guttenberg Volunteer Firemen. The station houses two fire trucks, plus a station wagon that serves emergency police and rescue functions. The department, which serves all of Jefferson Township in addition to the community, is using trucks that range in age from 16 to 18 years. Despite the fact the vehicles have been serviced under a good maintenance program, age soon will dictate replacing both vehicles.

It is recommended that the community immediately initiate a systematic program for the replacement of firefighting equipment, thus insuring adequate facilities without sacrificing other needed improvements when equipment breakdown suddenly forces an unexpected expenditure of funds for new equipment. If a 25-year replacement schedule were adopted for three vehicles, one should be replaced each eight to nine years. One of the vehicles is scheduled for replacement in 1972.

The City of Guttenberg is in the process of acquiring the old Interstate Power building near the intersection of Pearl Street and the railroad tracks. This structure will require considerable remodeling before it can be used for the fire department, but the location is advantageous. The new station should provide space for truck parking, an office, a meeting room and a work area for training.

Police Department

The Guttenberg law officer has a small office area in the Municipal Building, with the communications system operated through the City Clerk's Office. The office is too small to permit proper police functions, including routine paperwork and associated conversations, interviews and other related police work, as well as limited equipment and materials storage. When the City Hall is remodeled, provision should be made for a larger office and work area.

The police squad car should continue to be replaced on a regular basis, and communications equipment kept up-to-date.

Library

Guttenberg has a good, rapidly growing public library that had its beginning in the late 1920's as a few shelves in the Guttenberg pharmacy. In 1925 the Guttenberg Public Schools Alumni Association gave the library its real start when it voted to buy 100 books and place them in the drug store. With construction of the Municipal Building in 1939, the library was moved into its present quarters in that structure.

Circulation during 1968 was 12,318 with approximately 5,200 volumes in the library's collection. This contrasts with a circulation of 862 in 1956 when there were 2,961 volumes and the facility was open two hours a week. It now is open 20 hours each week.

The library, under the direction of a five-member board, currently is a member of the Northeast Iowa Cooperative book purchasing group, headquartered in Cedar Falls, and finances its budget through a combination of municipal, county, state and federal funds. The cooperative, in addition to making it possible to buy books at reduced rates, also makes a large number of books available to the library on a rotating basis. The board currently is building good reference and non-fiction sections to its list of available volumes.

The Municipal Building provides a convenient location for the library, which currently has adequate space. However, with continued growth anticipated, the facility will need additional space.

As noted previously, expansion of the space devoted to library use should be a part of a long-range plan for remodeling of the Municipal

Building. Location in the building is desirable, both economically and as a central location to all parts of the community. When new space is provided, it should be ample to permit steady increases in future years in the number of volumes and the types of materials available. In the meantime, careful arrangement of the existing space will be essential in order to obtain maximum usefulness, and to permit continued acquisition of new materials. It would be tragic to the entire community to stifle materials acquisition due to lack of space.

Municipal Parking

There currently appears to be sufficient parking on the streets to serve the business district of Guttenberg. However, as the business potential increases in the years ahead and the merchants become seriously interested in expanding the downtown area's share of that potential, off-street parking will become necessary. Several alternatives appear available and should be considered now to permit long-range planning rather than developing a crash program later. Among these alternatives, and the advantages and disadvantages of each are:

1. Acquire the properties immediately east of the Municipal Building north of the Western Auto Store and east to the alley. Among the advantages of this location are its proximity to the Municipal Building, its proximity to the downtown stores, elimination of dwelling units that are on cramped sites, potential for stores backing onto the lot to provide rear store entrances and accessibility to major streets. The chief disadvantage is the potentially high cost of acquisition.

2. Acquire the property east of the tavern that is located just across the intersection northeast from the Municipal Building and extending east to the alley. The advantages are similar to the No. 1 site, except that this site is smaller. The potential for expansion is available with possible future acquisition of the tavern or property north of it. Disadvantages chiefly are the potentially high cost, although the cost of this site would be expected to be somewhat less than site No. 1.

3. Close either Herder or Schiller Street (but not both) between First and River Park Drive to through traffic and turn the block-long section of street into a parking

lot. By using 90-degree (perpendicular) rather than parallel parking as is necessitated by through traffic on the street, considerably more vehicles could be parked in the block. Advantages principally involve less cost than sites No. 1 or 2. Disadvantages include interruption of the flow of traffic (though not seriously) and creation of a parking lot with homes fronting onto it.

Alternate No. 3 should not be undertaken on both segments of the suggested streets (Herder and Schiller) because it would seriously disrupt the flow of traffic into and through the business district. Development of one of the one-block segments of street as a parking lot should include plantings, lighting and improved sidewalks. It should be noted that from a planning standpoint Alternate No. 3 is the least desirable.

Choice of off-street parking sites to serve the business district should include consideration of parking for the Municipal Building, and should be close to the business district.

Parks and Recreation Facilities

Existing park and recreation facilities in Guttenberg include various municipal, school and semi-public facilities. The city park along much of the community's Mississippi River front provides the largest park facility, with the river itself providing a variety of recreational activities. The park contains picnic tables, benches and barbecue stands and serves not only the city, but rural residents and tourists as well. Access to the park is from River Park Drive. The park commands a good view of the activities on the river and the operation of the Army Corps of Engineers Lock and Dam No. 10.

Other recreational facilities in the community include the school playgrounds, which primarily serve the immediate neighborhood, and the school athletic fields, which offer baseball, track and football facilities. The school grounds provide play equipment, and outdoor basketball and tennis facilities. Distance of the principal athletic field from the schools is a detriment.

Semi-public areas include a golf course and a Boy Scout camping area which has electricity available for limited camping. The nine-hole golf course is $1\frac{1}{2}$ miles north of Guttenberg along Highway 52. It was constructed in the early 1960's on about 40 acres. It is widely used, and a farm house converted to club house offers dining facilities. Storage buildings for golf equipment and carts also have been added.

Also outside the community, but available for use by local residents, is a county recreation area some three miles north of town. Facilities there include camping, restrooms and park benches. The State Conservation Commission also has a recreation area at the north edge of the community offering boat access to the Mississippi. The Clayton County fairgrounds are located 14 miles north of Guttenberg, and an auto race track is located at Elkader (22 miles).

No swimming pool currently exists in Guttenberg, but recently a citizens group has been attempting to determine if there is sufficient interest to construct a pool through a donation program. Such an undertaking has proven successful in several other Iowa towns in recent years.

On a current annual budget of about $ 3,500, the city operates its parks and recreation program, which includes a nine-week summer recreation program that involves use of school facilities. Such combined municipal-school programs are laudable attempts to achieve maximum return from invested tax dollars.

Guttenberg should take steps immediately to purchase land for a community-wide park and camping area of at least 18 to 20 acres, though 25 to 30 acres would be preferable. A suggested location for the park is a triangularly-shaped parcel bounded by Koszciusco on the south, Bluff Street on the west and the railroad on the east. This tract of approximately 20 acres currently is undeveloped yet is within reasonable distance of all sections of the community. Immediate development of the park should include access, a minimum amount of hard-surfaced drives, parking, walkways, shelters, tables and other picnic equipment, play equipment for young children, shuffleboard courts, horseshoe pits or other appropriate adult games, fencing along the railroad and an extensive landscaping and tree planting program. The park also should serve as site for a community swimming pool, if such a pool is desired and isn't located on school property. As funds become available later in the planning period (1970-1990), other structures and game courts should be considered.

The public camping area, if located on the northern six or seven acres of the proposed park site, would be within about two blocks of the Mississippi River, and with woodland area located immediately to the west across Bluff Street, yet would be somewhat isolated from the remainder of the park (and the isolation could be enhanced by landscape screening) and from the community. Such a camping area, which should include bathhouse facilities, lighting, landscaping and drive improvements, would be a major attraction of visitors to the Guttenberg area.

The proposed park would have a different potential use than the riverside park nearer the center of Guttenberg. This park has little active "play" or "game" area and should not be used as the site for structures -- as a swimming pool or recreation building. The riverside park, which should be maintained as public use property and improved, serves nicely as a neighborhood park nearer the most compact housing sections of Guttenberg, as well as a major attraction of visitors to Guttenberg.

A major advantage of the Koszciusco location for a community-wide park is its proximity to school property that could be used at least for school athletic fields. As recommended in a subsequent section of this report, the school property north of Koszciusco (immediately east of the railroad) would be a desirable location for the Guttenberg junior and senior high buildings.

As noted above, there is presently some expressed local interest in constructing a swimming pool. It is highly desirable that if such a facility is built, its location with respect to other recreational activities be carefully selected, and every attempt be made to achieve maximum utilization of the new facility. It is recommended that if sufficient local interest exists, that private donations be supplemented by the city to a sufficient extent to provide an enclosed pool for year around use and that, if possible, the pool be made a part of the school district's senior high complex to permit integration of the pool into the school's physical education program, in addition to general public use. The school district could accept responsibility for routine maintenance, administration, staffing and instructional programs. At least part of the cost of summertime maintenance, administration and staffing would be off-set by admission charged to the general public. This type of arrangement, combining private, city and school resources, would represent an excellent example of the type of cooperative effort that can be used to achieve objectives that may not be achievable by any of the units individually.

Provision should be made for access to the Mississippi below the lock and dam at Guttenberg. However, it is desirable that such access not infringe in a major way on the existing riverside park.

The city should consider any private proposal to provide such access as part of a commercial marina and should encourage the county to make additional provision for river access below the dam in the Guttenberg area.

Organized summer recreation programs should be expanded by the city in cooperation with the school district to include additional activities for teenage groups and older adults. Late in the planning period the city should consider construction of a recreational structure in the proposed community-wide park to house the on-going recreation programs for older adults and others, particularly during the winter months. Organized city winter recreation programs should include ice skating on one of the ponds. The city should clear the ice and provide a small warming house.

Municipal Airport

Guttenberg also operates a municipal airport with a 2,600-foot, lighted turf runway for small aircraft. The airport land is leased from a private owner on an annual basis. Two privately-owned hangars are located at the facility at the north edge of Guttenberg on a peninsula jutting out into the Mississippi River.

As funds become available later in the planning period, Guttenberg should attempt to obtain a long-term lease on the present airport site. If such negotiations are successful, a hard-surfaced runway should be provided as use warrants.

Garbage and Refuse Disposal

Under Iowa Air Pollution Control Commission regulations, open burning at landfills is prohibited. Guttenberg had its own landfill prior to 1970 which was used by the city for garbage and refuse disposal. Recently Guttenberg joined in the county-wide landfill system which operates a landfill a few miles north of Elkader.

Under the new system the city will collect garbage and refuse and haul them to the county landfill, where it will be properly disposed. The collection will be on a wekkly basis in residential neighborhoods with a $1.75 per month fee charged all families. Commercial and industrial service will be provided on a more frequent basis, if needed, with a graduated fee based upon volume. The old city landfill will be used only for the disposal of trees.

Hospital

The Guttenberg Community Hospital is located on a square in the residential area north of the central business district. The 38-bed, two-story brick facility was constructed in 1960 and opened its doors in 1961. The hospital employs approximately 50 people of which 35 are employed full-time.

This municipal facility is administered by a non-profit, three-man elected board. The facility is in good condition, but has only limited parking. Ambulance service is provided through the city police department.

Flood Control Project

The City of Guttenberg is currently undertaking a 2.8 million dollar flood control project in conjunction with the U. S. Army Corps of Engineers. The project is designed to provide flood relief for the city as it is located in the flood plain of the Mississippi River. The project will include a series of ponding areas in the western portion of the community between Highway 52 and the bluff. Current plans call for the collection of flood waters which will be diverted back into the Mississippi River. These ponding areas will provide Guttenberg with a different water-oriented setting which could be the basis for a semi-passive recreation area. The development of this area should be carefully designed to provide walkways, play areas and picnic facilities.

City Garages

The city has three buildings in its maintenance garage and yard system. Two of the buildings (one built in 1939, the other in 1954) are located between Prince and Pearl Streets--the same block in which the power substation is located. The third building was built in 1939 and is located five blocks north between Pryam and Mozart Streets. Each of the sites is 200 by 100 feet in size with some off-street parking.

The newest building (1954) is the largest, measuring 100 by 30 feet in size. The nearby structure is 60 by 32 feet, with the third building the smallest, measuring 30 by 18 feet.

General condition of the structures is fair, and they provide adequate space at convenient locations; however landscaping is needed.

The drives and parking areas at the maintenance garages should be improved, with a major effort made to improve the appearance of the sites and structures. Landscaping should be provided immediately, along with the drive and parking surfacing.

Cemetery

There are two cemeteries in Guttenberg, both at the south edge. One is the Catholic Mount Olivet Cemetery, and the other is the Guttenberg Cemetery. Another Catholic cemetery is located about five miles from the community.

Both of the cemeteries located in the city are well maintained. The city cemetery is maintained through a Cemetery Association which is provided money from the sale of lots, and is partially supported through local taxes. Money goes into a perpetual care fund designed to provide continued maintenance through the years. There is sufficient space in the cemeteries to serve the community and Jefferson Township for some time. Every effort should be made to maintain the cemeteries without support of tax funds. Charges for lots should be sufficiently high to provide enough money for the perpetual care fund so that interest on the money will cover the annual maintenance cost of the lot. An additional fee should be charged at the time of each funeral to cover all costs related to the opening and closing of a grave.

Late in the planning period as funds become available, provision should be made for expansion for the municipal cemetery.

Post Office

A post office first was established in Guttenberg October 14, 1847, and after being shifted through various locations in the Guttenberg business district, the office was settled in the Odd Fellows building. After nearly a half-century, it was moved about three-quarters of a block to its present location in 1964. The present facility is now a modern brick structure with a stone front. It has adequate loading and parking (asphalt surfaced) to serve the community during the planning period.

Schools

Schools in Guttenberg have had a history of growing pains with increasing enrollments and a need for expanding facilities. Current need was increased with the closing of the parochial high school two years ago. At the present time, there are 1, 093 students enrolled in schools in Guttenberg (820 public, 273 parochial). Schools are a major employer in the community, currently requiring 48 teachers (37 public, 11 parochial), three part-time teachers (parochial), two teacher assistants (public), and six administrative (five public, one parochial) and four maintenance (three public, one parochial) personnel.

The parochial systems involves St. Mary's Schoolin Guttenberg, with a current enrollment of 273, including 96 students bused to the school from North Buena Vista. The system uses a new (1961) elementary building with six classrooms, plus the old parochial high school building which houses three parochial classes (plus two public school sixth grade classes), a reading center and science room. When the parochial high school was closed in 1967, enrollment in the public school increased from 726 (1967-68) to 817 (1968-69). The public and parochial systems cooperate in many ways, including coordination of school calendars. The present public school enrollment (820) represents a seven percent increase over the 1964-65 enrollment (690) even after the effects of the closing of the parochial school have been removed. A class-by-class breakdown of the 1969-70 public and parochial enrollments is shown on Table 5-1.

The public school system, which encompasses a district of approximately 100 square miles, has three attendance centers, all located on a common site overlooking the Mississippi in Guttenberg. The elementary (built in 1957-58), junior high (built in 1880) and senior high (built in 1906) buildings are separate structures, but connected by hallways. The present facilities are inadequate and inconvenient. The public system's two sixth grade classes currently must meet in the old Catholic high school building, and physical education classes must be bused about a mile for outdoor class sessions. The band practices in the basement of St. Mary's Church. Shop classes are held in the school bus barns.

The existing site is too cramped to properly serve as the location of the entire Guttenberg Community School District physical plant. It can function quite well as the location of an elementary school, but the junior and senior high facilities should be moved elsewhere. It is recommended that a site of approximately 28 acres north of Koszciusco

Street and east of the railroad, where some school property now exists, be consolidated as a single site owned by the district. The site would make a good location for a junior-senior high building and all the associated district functions, including athletic facilities.

This proposed school site is directly across the railroad from the proposed site of a 20-plus-acre community-wide park. The complex of properties would form a highly desirable public use area with a variety of recreational opportunities for local residents and the many summer visitors. The proposed school site also is within walking distance of most of the developed portion of Guttenberg (as is the present inadequate school site) and thus would not require busing of students from the community itself as would any potential school site on the bluff west of Guttenberg.

It is also recommended that as funds permit the present bus barn facility be phased out of use and the activity consolidated onto the junior-senior high school site.

It is further recommended that the school district cooperate with the city and private interests in attempting to provide the community and district with a swimming pool and swimming program. If private and city funding sufficient to construct an enclosed pool are provided, it is recommended that the district permit construction of the pool as part of its junior-senior high complex at the site north of Koszciusco Street, and accept responsibility for administering, staffing, maintaining, and providing instructional programs related to swimming at the pool. This responsibility would include making the pool available for use by the general public at regular intervals during both winter and summer at a reasonable fee. The fee is intended to help offset costs related to the pool operation, and no other parts of the school program.

TABLE 5-1

School Enrollments, Guttenberg, 1969-70.

Grade	Public Enrollment	Number of Classes, Public	Parochial Enrollment*	Number of Classes, Parochial	Total Enrollment
K	89	4	--	--	89
1	72	3	47	2	119
2	68	3	39	1	107
3	62	2	36	1	98
4	58	2	39	1	97
5	47	2	40	1	87
6	43	2	28	1	71
7	58		26	1	84
8	52		18	1	70
9	65				65
10	67				67
11	66				66
12	73				73
Spec. Ed.	15**				15
TOTAL	835	--	273	--	1,118

*Includes 96 students from North Buena Vista.
**Special education casses are held in Garnavillo and Farmersburg.

Sources: Office of the Superintendent, Guttenberg Community School District; and Office of the Principal, St. Mary's School, Guttenberg.

PRIVATE UTILITIES

Municipal Electric Utility

Guttenberg operates its own electric distribution system serving more than 1,000 customers. Since 1936, the city has purchased electricity from Interstate Power Company for resale to individual customers, but prior to 1936, the city operated its own generating facilities. The substation in Guttenberg is owned by Interstate Power, with the utility maintenance garage located in the same block as the substation. Administration of the utility is handled at Municipal Building.

The distribution system is all above ground, except for some street lighting in the business district. Customers may install underground service, but at their own cost. The City will finance above ground service to the meter. New street lights are provided by the town by decision of the City Manager and/or City Council. There are no major cross-country transmission lines in the area.

In future installations it is recommended that new or replacement feeder and service lines be placed underground whenever practical. This is especially important in residential subdivisions, but the appearance of the entire community should be of concern. Every effort should be made to minimize the unsightly appearance of wooden utility poles and overhead wires throughout the community. The underground installation of electric lines should greatly reduce maintenance costs resulting from storm damage and also will result in higher quality development.

Natural Gas System

In 1961 a 25-year franchise was granted to Peoples Natural Gas to provide natural gas to the community. It was the first time such service was available. The company operates from offices in the downtown business district, with its source of supply being Northern Natural Gas in Omaha.

In addition to serving Guttenberg, Peoples Natural Gas also provides service to the south of the community about one mile.

Current policy regarding service to new areas is that the utility company will extend the gas main 200 feet along the street for each dwelling and will put in the first 60 feet of service line from the main to the house. A surcharge is made for extensions exceeding these distances. Capacity is sufficient to accommodate anticipated community growth throughout the planning period.

Telephone Service

Guttenberg is served by Northwestern Bell Telephone Company from a new (March 1967) office building in the downtown business district. Switching equipment is located in the same building. The company also serves the associated rural area surrounding Guttenberg, including Millville, Osterdock, and Garber.

As with new electric installation, it is recommended that new or replacement telephone lines be placed underground. Every effort should be made to minimize the amount of unsightly wires and wooden poles (both electric and telephone) in the community. Although this is particularly important in residential areas, appearance of the entire community should be of concern. Experience elsewhere would indicate that underground lines can reduce maintenance costs resulting from storm damage, and at the same time result in higher quality development.

SANITARY SEWER SYSTEM

Introduction

Sewage treatment methods may be divided into two broad categories known as primary and secondary treatment, denoting the degree of treatment given to the wastes. The degree of treatment required in a specific instance will depend upon the ability of the receiving stream to assimilate the waste load and the requirements for treatment imposed by the regulatory agencies.

Primary treatment is the simplest and most economical process. Partial treatment is achieved, with the removal of up to 60% of the suspended solids and 35% of the BOD (biochemical oxygen demand) from the sewage.

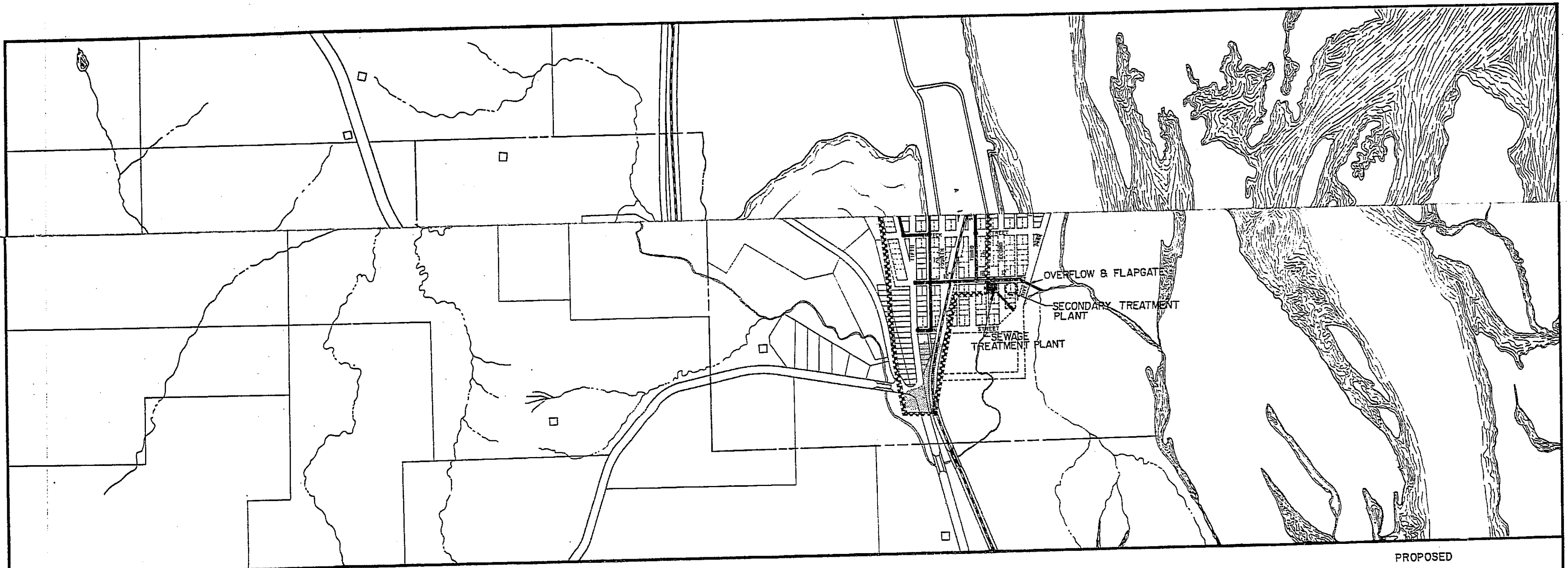
Secondary treatment is more expensive and effective, and will accomplish removals of up to 90% of the suspended solids and BOD from the sewage. This is also sometimes referred to as complete treatment, but this does not mean that a potable water is produced.

The original sewer system was installed in 1930. Since that time, there have been additions and improvements to the system, especially the new primary treatment plant which was constructed in 1964. Some of the original sewers have been damaged or have deteriorated to the extent that they have been recently removed or abandoned and new sewer lines installed. A general plan of the sewer system is shown on Map 5-1.

There is an existing map of the sewer system but it is not too accurate because the various changes to the system have not been recorded. It is important that an accurate map of the sewer system be prepared and kept up to date and that information be added to the map as it becomes available. A copy of the map should be placed in the city hall and in the maintenance garage.

Collection System

Guttenberg's sewage collection system consists of an 18" interceptor sewer that runs west from the plant one-half block where



EXISTING

8" MAINS
6" MAINS
MAINS UNDER 6"
FORCE MAINS
MANHOLES

SEWER SYSTEM 1970

PROPOSED

SEWER MAINS
FORCE MAINS
LIFT STATION
FUTURE SERVICE AREA
TREATMENT FACILITY

THE PREPARATION OF THIS MAP WAS FINANCIALLY AIDED THROUGH A FEDERAL GRANT FROM THE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT UNDER THE URBAN PLANNING ASSISTANCE PROGRAM AUTHORIZED BY SEC. 701 OF THE HOUSING ACT OF 1954, AS AMENDED

SCALE IN FEET

CITY OF GUTTENBERG
CLAYTON COUNTY, IOWA

CLAYTON COUNTY REGIONAL PLANNING COMMISSION

MAP
5-1

URBAN PLANNING GRANT PROJECT No. IOWA P-145 PREPARED UNDER CONTRACT FOR AND FINANCED IN PART BY THE IOWA DEVELOPMENT COMMISSION UNDER THE PROVISIONS OF CHAPTER 28, LAWS OF THE 58th GENERAL ASSEMBLY OF IOWA, AS AMENDED, BY:

POWERS-WILLIS & ASSOCIATES
PLANNERS · ENGINEERS · ARCHITECTS
IOWA CITY, IOWA

DATE OF BASE MAP PREPARATION: 1969

it joins a 15" trunk sewer that serves the southeast section of the city. A 12" trunk sewer runs west and north until it connects to two 10" sewers at Fourth and Schiller Streets which serve the remaining portion of the city. The remaining sewers in the system are 8" laterals and comprise most of the system. The northern portion of the system is also served by two lift stations. One is located at Fourth and Washington Streets and pumps the wastewater through a 6" force main to a manhole on Washington Street between First and Second Streets. The other lift station is located on the northeast corner of the square and pumps the wastewater into the manhole located directly west of the lift station.

Rates

The sewer rates are equal to 75% of the water bill. The cost of extending sanitary sewers into new areas is assessed to the property owners. A water rate schedule is presented later in this report.

Sewage Treatment Plant

Guttenberg's sewage treatment plant was constructed in 1964. The plant has a capacity of 275,000 gallons per day but provides only primary treatment.

It is apparent that the design population of the plant will adequately serve the community with primary treatment throughout the planning period. Plant capacity could be reached, however, with the location of additional major water users in the community or with the contribution of excessive flows into the system due to storm water infiltration and connection of roof and foundation drains. The per capita water consumption should increase which will increase the treatment load at the plant.

Modern sewage treatment plants require adequate laboratory facilities in which tests pertinent and necessary to the proper operation of the plant can be performed. However, elaborate testing facilities are not necessary at this time because the State Department of Health requires only the minimum of testing with regard to primary treatment plants.

Treatment plants are often surrounded by a tight wire mesh or chain link fence to discourage trespassers, animals and prevent many nuisance and danger factors. Such a fence is provided around the treatment plant and around the sludge lagoons.

The Federal government is now requiring secondary treatment for all communities which discharge their wastewater into interstate streams. The Mississippi River is an interstate stream, therefore, Guttenberg's primary treatment plant does not meet these specifications and secondary treatment will be required in the near future.

Infiltration

The problem of excess infiltration can be resolved in two ways: increase the treatment facilities to handle normal domestic flows plus the infiltration, or reduce the infiltration to an acceptable flow by rehabilitation of the system.

The plant capacity could be increased to accept infiltration flows; however, the infiltration problem would still remain to be dealt with in the future.

Rehabilitation of an existing sanitary sewer system can be accomplished by initiating a three-step process:

1. A preliminary survey of the system.

2. Cleaning and television inspection.

3. Repair to reduce the sources of infiltration.

A preliminary inspection survey would determine the extent and cost of television inspection that would be required. Sewer cleaning and television inspection currently available offers the advantage of visual inspection from inside the sewer pipe, without interruption of flow and without excavation.

Rehabilitation of an existing sanitary sewer system by repair of the faulty portions rather than replacement is economically sound if the cost does not exceed replacement cost. This is assuming that performance of the rehabilitated system can be expected to equal that of a new system.

Conclusions and Recommendations

1. A program of inspecting existing sanitary sewers was previously undertaken to determine the condition of part of the system. From the results of this inspection part of the system was up-graded. In addition, a fewer study should be made which would determine the feasibility and approximate cost of rehabilitating the remainder of the system. If rehabilitation is economically sound, additional work should be done in the near future.

2. The importance of having a sound sanitary collection system is evidenced by the fact that a major trunk sewer was abandoned because of structural defects and a new main was constructed.

3. Only a few new areas can be served by the existing gravity sewers. Sewer extensions to serve areas of new construction and development may necessitate the construction of lift stations to pump sewage through high points in the existing system. This should be done only after careful study because of the possibility of overloading existing lines.

4. Control should be exercised over the platting of land in the future to make the best use of existing sewer mains and appurtenances.

5. The primary sewage treatment plant is relatively new and in good condition and should provide satisfactory primary treatment for the community throughout the entire planning period.

6. Secondary sewage treatment facilities should be constructed so that the community's wastewater after treatment meets present-day standards.

WATER SYSTEM

Introduction

Guttenberg's water system was initially constructed in the 1920's. The large storage reservoir located on a high bluff west of the city maintains a static pressure in the system of 110 psi. This is excellent for a community of any size. However, the entire city is not served by the municipal water system. Approximately 20% of the residents do not have access to city mains and must maintain individual private systems.

A general plan of the existing distribution system and appurtenances is shown on Map 5-2. A map of the existing system is on file at city hall. However, a new map of a smaller scale should be maintained which shows all mains and appurtenances. It is important that a map of the water system be kept up to date and that a copy be placed in the city hall and in the maintenance garage.

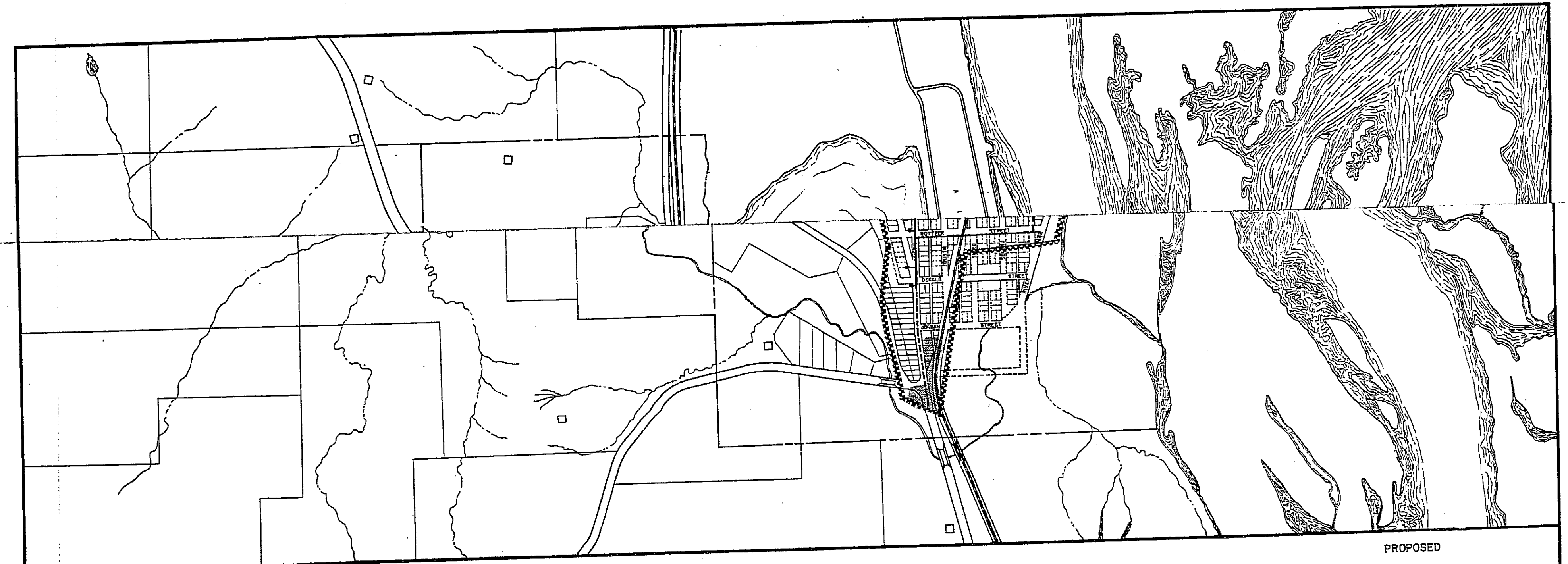
Rate Schedule

All customers of the Guttenberg water system are charged $0.60 per 1,000 gallons per month with a minimum charge of $3.00 per quarter (5000 gallons). The usual method is to charge each water user the same rate for the first few thousand gallons with the rate per thousand gallons decreasing as the amount used increases.

Quality

Table 5-2 presents a mineral analysis of the water supply at the source reported in the bulletin "Iowa Public Water Supply Data" by the Division of Public Health Engineering, State Department of Health, State of Iowa, 1964.

The results of the analysis show a moderately hard water, which is not uncommon for wells in this area.



EXISTING

8" MAINS
6" MAINS
4" MAINS
MAINS UNDER 4"
HYDRANTS

WATER SYSTEM 1970

PROPOSED

8" MAINS
6" MAINS
4" MAINS
STORAGE TANKS
FUTURE SERVICE AREA
WELL

THE PREPARATION OF THIS MAP WAS FINANCIALLY AIDED THROUGH A FEDERAL GRANT FROM THE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT UNDER THE URBAN PLANNING ASSISTANCE PROGRAM AUTHORIZED BY SEC. 701 OF THE HOUSING ACT OF 1954, AS AMENDED

SCALE IN FEET

CITY OF GUTTENBERG

CLAYTON COUNTY, IOWA

CLAYTON COUNTY REGIONAL PLANNING COMMISSION

MAP 5-2

URBAN PLANNING GRANT PROJECT Nº. IOWA P-145 PREPARED UNDER CONTRACT FOR AND FINANCED IN PART BY THE IOWA DEVELOPMENT COMMISSION UNDER THE PROVISIONS OF CHAPTER 28, LAWS OF THE 58th GENERAL ASSEMBLY OF IOWA, AS AMENDED. BY -

POWERS-WILLIS & ASSOCIATES
PLANNERS - ENGINEERS - ARCHITECTS
IOWA CITY, IOWA

DATE OF BASE MAP PREPARATION- 1959

TABLE 5-2

Mineral Analysis

All reported in milligrams per liter except pH.

	Well No. 1	Well No. 2
pH	7.5	7.5
Dissolved solids	376	347
Total solids	376	347
Soluble iron	0.06	<0.05
SiO_2 - Silica	10.8	12.8
Alkalinity		
P - phenolphthalein	0	0
T - Total	308	300
K - Potassium	3.3	2.1
Na - Sodium	27.1	15.7
Ca - Calcium	73.3	73.3
Mg - Magnesium	36.2	35.7
Mn - Manganese	0.18	0.07
NO_3 - Nitrate	<0.4	1.8
F - Fluoride	0.2	0.1
Cl - Chloride	31	20
SO_4 - Sulfates	92	38.5
HCO_3 - Bicarbonates	376	366
CO_3 - Carbonates	0	0
Hardness as $CaCO_3$	332	330

Source: Division of Public Health Engineering, State Department of Health.

A sampling program for bacteriological and mineral analysis is recommended to determine the present quality of water being supplied to the system by the wells.

Water Use

As the demand for more quantity and better quality of water increases, the necessity for improved water management increases. Water is a limited resource which cannot be manufactured or destroyed. Every effort must be employed to maintain the high quality of water necessary to meet the demands for domestic, industrial and commercial uses. It should be the objective of each community to develop the most economical and best quality water supply possible to meet the needs of its users.

The amount of water used in 1969 varied from an annual average of approximately 83, 500 gallons per day to a peak day use of 119, 500 gallons per day. Average summer daily use was 89, 200 gallons per day.

Table 5-3 presents these figures with corresponding flows in gallons per capita per day and in gallons per minute.

TABLE 5-3

Water Use*

	Gallons / Day (gpd)	Gallons / Min. (gpm)	Gallons / Capita / Day (gpcd)
Annual Average	83, 500	58	50
Summer Average	89, 200	62	54
Peak Day	119, 500	83	72

*Based on an estimated 1, 660 water users in 1969.

The per capita consumptions are low for a community such as Guttenberg. This could indicate that the meters are not recording all of the water used. This probability could be checked if adequate monthly pumping and usage records were being maintained. The total water pumped could then be compared with the total water consumed by the users which could be obtained from the monthly billing records. This comparison would give an indication of probable deficiencies in the system which may need more detailed study. Considerable water may be lost each day through undetected leaks in the distribution system. The need for adequate record keeping cannot be over stressed because effective use of such records is an excellent management tool in determining the adequacy of the water system.

Fire Demand

A community's requirements for water for fighting fire, referred to as fire demand, is a function of its population and the nature of the districts served. The fire demand is determined by a formula based on population developed by the National Board of Fire Underwriters.

According to the recommended formula, Guttenberg should be able to meet a fire demand of 1,470 gallons per minute for a duration of 5 hours.

Table 5-4 presents the domestic, commercial and industrial demand, the fire demand and the resulting total demand.

TABLE 5-4

Water Demand, GPM

	Annual Average Day	Summer Average Day	Annual Peak Day
Domestic, Commercial and Industrial Demand	58	62	83
Fire Demand	1,470	1,470	1,470
Total Demand	1,528	1,532	1,553

Supply

Guttenberg has two municipal wells, as shown on the map of the system, which have been in use for 33 years. One well is

435 feet deep and the other is 450 feet deep and both draw water from the Prairie du Chien Dol-Jordan sandstone formation. Well No. 1 is used as the principal source of supply with Well No. 2 as essentially a standby source.

Table 5-5 lists some pertinent data relative to the source of supply. Both wells are located near the water treatment plant at Schiller and Bluff Streets, but appear to have adequate distance between them so that neither one would affect the other when pumped.

TABLE 5-5

Source of Supply

Well No.	Depth in Ft.	Drilled	Pump Capacity (gpm)
1	435	1937	375
2	450	1937	300

The total capacity of the wells is considerably more than the domestic demand but much less than the total demand including fire demand. Normal practice is to utilize storage to help meet fire demand, which will be discussed further under the section on storage.

Treatment

Contamination of municipal or private water supplies is an ever-present probability. It is not possible to predict the exact time when, or if, the supply would become contaminated. It could occur just after taking a water sample for testing. For this reason, chlorination should be employed to assure continuance of a safe supply.

Present treatment of the water is limited to lime softening with no provisions for chlorination. Softening is aimed at the removal of hardness in the water and does not remove or destroy bacteriological growth as does chlorine treatment.

Storage

Water is stored for several purposes: to equalize pumping rates over the day; to equalize supply and demand over a long period of high consumption; and to provide water for emergencies such as pump breakdowns, power failure and fire fighting.

Equalizing storage needs can be developed from hourly pumping records, and normally average 15 to 20% of the daily demand. A figure of 17.5% was assumed for this study. Fire demand is a function of population and the nature of the districts served and was discussed previously in this report.

Storage can be located either on the ground or elevated above ground. Water ground storage is more economical to install but water in such storage must be pumped into the system and would not be available during periods of power outage unless standby power is provided. However, water in elevated storage is available at all times so the preferred practice is to provide sufficient elevated storage for a period of fire reserve without power.

The principal storage facility in the Guttenberg system is a 210,000 gallon reservoir built in the 1920's which is located on the bluff above and west of the developed area. Water is pumped to the reservoir from a 50,000 gallon clear well storage facility at the treatment plant. The reservoir on the bluff provides water by gravity to the entire city of Guttenberg with the exception of a nursing home and limited other developments on the bluff. This reservoir is in effect an elevated storage facility to the city below. However, water must be pumped to the users on the bluff.

From the total demand developed previously and using the estimated equalizing storage, it is possible to determine the adequacy of the present storage facility to meet the fire demand. This data is presented in Table 5-6.

This table indicates that the city does have sufficient storage at the present time with the tank on the bluff and the clear well storage to meet the fire demands recommended by the National Board of Fire Underwriters. The present storage facilities would provide 4 hours and 29 minutes of fire demand flows during the estimated peak demand period in the year 1990.

TABLE 5-6

Present Storage for Fire Reserve (1969)

	Annual Average Day	Summer Average Day	Annual Peak Day
Total Demand, gpm	1,528	1,532	1,553
Available flow from wells, gpm	675	675	675
Deficiency to be made up from storage, gpm	853	857	878
Storage required to meet deficiency during 5-hour fire flow, gallons	255,900	257,100	263,400
Equalizing storage required, gallons	14,600	15,600	20,900
Total Storage Required, Gallons	270,500	272,700	284,300

Distribution System

There are almost eight miles of cast iron water mains in Guttenberg. They vary in size from 10-inch to 4-inch in diameter.

The lengths and percentages of the various sizes of pipe as well as the number of hydrants in the distribution system are presented in Table 5-7.

Deadends are usually a source of taste and odor problems in a water system. They also tend to accumulate deposits of rust and do not reinforce the system. There are 10 deadends in the present system, and efforts should be made to eliminate as many as possible. Strengthening of the distribution system would result with more uniform pressures and increased fire flow.

TABLE 5-7

Water Mains and Hydrants

Size Diameter	No. of Hydrants	Water Mains	
		Lin. Ft.	Percentage of Total
4"	29	16,775	40.8
6"	37	20,275	49.4
8"	0	1,050	2.6
10"	2	2,950	7.2
Total	68	41,050	100.0

There is an average of one hydrant for each 600 lineal feet of main, which is fairly good coverage of the city for fire protection. Better fire protection could be afforded by placing more of the hydrants on 6" mains because a 6" main has almost three times the capacity of a 4" main.

Conclusions and Recommendations

New areas requiring water service would be the same as those shown for future extensions of the sewer system. In addition to the extension of service into these areas as development occurs, other improvements to the water system are necessary. The following recommendations are made:

1. Chlorination of the water supply should be included in the treatment process. The present water treatment facilities reduce the hardness of the water but do not treat the water bacteriologically.

2. A detailed engineering study and report of the water system should be initiated to determine the extent and cost of needed improvements, revisions to the rate structure, current water use and analysis, and methods of financing proposed improvements.

3. A bacteriological examination of water samples from the system should be made to determine the possible presence of iron bacteria. These organisms, gallionella and crenothrix, are not disease producers but cause plugging of filters, zeolite softeners, and distribution lines and cause problems of taste and odor.

4. Adequate records should be maintained of the water pumped and the water billed. A comparison of the two may indicate excessive loss in the system or the need to initiate a meter repair program. The water should be metered at the pumps and at the treatment plant. It is recommended that such meters be installed.

5. It is recommended that the deadends be eliminated, small mains replaced with larger mains where necessary and hydrants be supplied from the larger mains in the future. General locations of future major water mains are shown on Map 5-2 together with future service areas.

6. Where economically justified, municipal water service should be provided for those residents of the city not already served and for new developing areas.