

May 18, 1979

Introduced by: PAUL BARDEN

Proposed No. 79-733

ORDINANCE NO. 4332

AN ORDINANCE approving the Burton Water Company Comprehensive Plan.

PREAMBLE:

King County filed a Declaration of Non-Significance for the proposed plan on June 11, 1979.

The Utilities Technical Review Committee reviewed the proposed plan as required by KCC 13.24 and on May 9, 1979 recommended its conditional approval.

BE IT ORDAINED BY THE COUNCIL OF KING COUNTY:

SECTION 1. The Burton Water Company Comprehensive Plan (attached) is hereby approved provided that this approval shall not be construed to mean that the Burton Water Company System is adequate in terms of the requirements of KCC 17.08 (Fire Hydrants and Water Mains). This approval is granted on the basis that the facilities proposed by the Burton Water Company Comprehensive Plan will improve the company's system and ability to provide fire protection. New development within the Burton Water Company service area must still demonstrate compliance with the provisions of KCC 17.08.

INTRODUCED AND READ for the first time this 4th day of June, 1979.

PASSED this day of June 18, 1979.

KING COUNTY COUNCIL
KING COUNTY, WASHINGTON

Ruby Chow
Chairman

ATTEST:

Brenda M. Amara
DEPUTY CLERK of the Council

APPROVED this 22d day of June, 1979.

Paul Barden
KING COUNTY EXECUTIVE

48770

79-733

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RECEIVED
KING COUNTY COUNCIL

COMPREHENSIVE PLAN

For The

BURTON WATER COMPANY

Submitted to the King County Council

By

Gerald R. Garrison, Proprietor
(phone 543-9818 or -1300 days)

BURTON WATER CO.
Rt. 1 Box 196B
Vashon, WA 98070

COMPREHENSIVE PLAN
For The
BURTON WATER COMPANY

HISTORY

Sometime back in the first part of the century several springs on the hill a mile west of Burton were used as a water supply for the Vashon College. The water was brought to the college by a system of flumes and pipes.

In later years the system was expanded to supply water to the residents of Burton. At some time, probably in the 1920's, it was owned by P. M. Armbruster, who sold it to R. W. McKinstry in about 1930. At this time the main line from the springs to Burton was a four-inch wood-stave pipe. A second concrete reservoir near the spring was added by McKinstry and a steel well casing was drilled at the spring to increase the water supply. Water lines were extended in several directions, all ditching being done by horse and plow, followed by men with picks and shovels.

In 1943 the source and the mains were overtaxed; customers complained and McKinstry was directed by the Department of Public Service to increase the size of some of the distribution lines to enforce sprinkling regulations.

In 1950 the system was purchased from the elderly

McKinstry by the present owner who has since operated it as a spare time occupation, with the help of his two sons. At the time of the purchase the wooden mains were leaking in many places and roots were entering the pipes and growing to such a mass as to nearly stop the flow. During the next few years the wooden main was replaced by wrapped steel pipe. Two concrete tile wells were installed and more pumps added.

The system grew at a steady rate; some larger asbestos cement mains were installed and regulation fire hydrants were provided. A chlorination system was added in 1968. During the last few years there has been adequate water supply and few complaints of low pressure.

Now comes the year 1977 with a surge of new homes and a deluge of government rules and regulations. Lines which had supplied adequate water for domestic use are considered too small for fire protection, a desirable though expensive service. Only time will show how this simple country water system survives the onslaught of progress and modernization.

POPULATION PROJECTION

During years prior to 1973 the system averaged two new service connections per year. In 1974 and 1975 this increased to four each year and in 1976 jumped to eight.

In estimating growth it is helpful to examine the ultimate capacity of the service area.

The Burton penninsula is nearly filled to capacity on the beach side of the road. The county park occupies much of the interior. There are about twenty building sites remaining.

In the Newport area, north of Burton, the beach side is nearly filled with residences but there are at least thirty vacant lots west of the road. The land further west, extending to 107 Ave S. W. could provide about twenty building sites. A good estimate of the ultimate size of the system is about 400 services, compared to the present 300. This is an important consideration in estimating growth rate.

We estimate the growth rate for the next ten years at nine services per year, or 3 percent annually. This would project to a filled area in eleven years.

EXISTING FACILITIES

The source of water for the system is on the hill to the west of Burton at an elevation of 250 feet. In an area where several springs produced water at the surface the supply has been increased by installing the following facilities:

<u>Quantity</u>	<u>Type</u>	<u>Material</u>	<u>Diameter</u> (inches)	<u>Depth</u> (feet)
(1)	Well	Steel	10	18
(1)	Well	Steel	8	18
(2)	Well	Concrete	54	18
(6)	Wellpoint	Galv. iron	1½	18

Three pumps are used during peak demand to pump from these wells into storage tanks. The pumping capacity is 150 gpm and is limited by the wells. During much of the year there is considerable flow from the wells without pumping.

On the five acres owned by the company there are two concrete storage tanks, each 22 feet by 40 feet by 6 feet deep. The total capacity is 80,000 gallons. A six-inch wood pipe carries the water across a marshy area. A six-inch steel pipe continues for about one-half mile toward Burton where it connects to a six-inch asbestos cement pipe which leads into and through Burton. Several 3-inch and 2-inch lines branch off at several road intersections and a 1½ inch line completes the encirclement of the Burton peninsula.

A water sample has recently been tested with the following results:

<u>Date</u>	<u>Location</u>	<u>Results</u>
April 26, 1977	Burton Shell Service Station	Satisfactory

A sample was submitted to a chemical laboratory for chemical analysis. The sample was analyzed on August 8, 1977, with the results as shown on the laboratory reports on the next page.

B. NETTETS CHEMICAL LABORATORIES, INC.

4320

ANALYTICAL CHEMISTS & ASSAYERS

901 SOUTH 9th STREET TACOMA, WASHINGTON 98405
(206) 272-4507 or 272-7969

REPORT OF ANALYSIS August 9, 1977

Our analysis of the sample of Water

From Burton Water Company
Received sample on August 5, 1977

Marked: As shown above

Arsenic	-----	0.01 mg/liter*
Barium	-----	0.10 mg/liter*
Cadmium	-----	0.005 mg/liter
Chromium	-----	0.01 mg/liter*
Iron	-----	0.01 mg/liter
Manganese	-----	0.01 mg/liter*
Mercury	-----	0.001 mg/liter
Selenium	-----	0.005 mg/liter
Silver	-----	0.01 mg/liter*
Lead	-----	0.01 mg/liter*
Color	-----	4 Units
Fluoride	-----	0.04 mg/liter
Nitrate	-----	0.20 mg/liter
Total Hardness as Calcium Carbonate	-----	40.3 mg/liter
Specific Conductance	-----	80 micromhos/cm
Turbidity	-----	0.5 F.T.U.

*Less than

To Burton Water Company
Rt. 1 Box 196B
Vashon Island, WA 98070

BENNETTS CHEMICAL LABORATORIES, INC.

By 

DEFICIENCIES

No deficiencies exist at present.

FUTURE NEEDS

With a 5-year projected growth rate of 15 percent we will need to increase our supply from 150 gpm to 173 gpm. We expect to accomplish this by the addition of three well points in the fall of 1977. To insure an adequate supply we will add three more well points in 1980. If we are limited by the available groundwater in the area rather than by our ability to extract it, some other source of water must be found.

The main line from the storage tanks to Burton is all 6-inch except for 700 feet of 4-inch steel pipe. The steel pipe is in good shape but does restrict the flow and reduce pressure below by about 10 psi during maximum usage. A larger pipe would provide better fire protection and reduce customers' insurance. We plan to replace the 4-inch pipe with 6-inch asbestos cement pipe in 1978.

There are several lines that may be too small to service areas that have had appreciable increases in customers. An area on the north side of the peninsula, just beyond the end of a 2-inch line installed in 1967, has a 1½ galvanized iron main from the west and a 1½ to 2-inch line coming around the peninsula. Recently added residences are overloading this area. About 500 feet of new line beyond the present 2-inch line would alleviate this problem. The King County Fire Marshal

requires that any addition be 6-inch pipe. The large cost, with no benefit until a 1700 foot extension of our present 6-inch pipe is made, has held up this improvement. The replacement may have to be made in a year or so.

The line on 107 Ave S. W. has a booster pump to increase the flow and raise the pressure for the services to the north. Several additional homes are planned on this area and it may be prudent to install 1200 feet of 6-inch line and move the booster pump to the end of said line.

An additional storage tank would be helpful in case of trouble with one of the tanks and as a reserve in case the other tanks were drained by a large break in one of the mains. We have started clearing for a third tank and plan to construct one in 1979.

CONSTRUCTION SCHEDULE

In summary of the last section, our construction schedule is as follows:

1977	Install 3 well-points
1978	Install 700 feet of 6-inch asbestos cement pipe to replace existing 4-inch pipe on S. W. 238 Street
1979	Construct a 50,000 gallon concrete storage tank adjacent to the other tanks
1980	Install 500 feet of 6-inch asbestos cement pipe on the north side of the peninsula (S.W.)

CONSTRUCTION SCHEDULE - cont'd

1980 - cont'd

236 St.) to replace existing 1 $\frac{1}{2}$ -inch galvanized pipe.

1982 Install 3 well-points

Install 400 feet of 6-inch asbestos cement pipe on 99 Ave S. W. (probably South end) to replace existing 2-inch galvanized iron pipe

1985 Install 400 feet of 6-inch asbestos cement pipe on 99 Ave S. W. (probably North end) to replace existing 2-inch galvanized iron pipe

These projects will be financed by reinvesting earnings from the company.

NEIGHBORING DISTRICTS

The only adjacent water system, except for a small one near Shawnee Beach that is too small to provide any assistance to our system, is Water District 19 to the north. However, the two areas are separated by Judd Creek. A connecting line would have to be installed on the bridge. Additional distance on each side of the bridge to large mains in each system makes an interconnection impractical at this time. As a goal for the future, this will be considered.

EXTENSIONS

All extensions of water mains must be paid for by the

EXTENSIONS - cont'd

customers served. There are very few areas within the boundary of our service area that are large enough for development. If a developer should request water we would require that mains be sufficiently large, that they be of satisfactory type and pressure capability, and that they be installed on well-graded roads at 30 inches depth. If the developer installs the mains the work must be inspected by the Burton Water Company. For any leaks or breaks assumed to be the result of improper installation, the expense of repair would be charged to the developer or the residences served.

COMPARISON WITH STATE AND COUNTY PLANS

At present there is no state basinwide water plan that involves Vashon Island. King County is expected to develop community plans for water in the near future. The Burton Water Company will endeavor to adapt the system to these plans.

MAPS

A map of the portion of the island enclosing the service area is shown in Figure 1. Particular areas referred to are the peninsula, the Newport line north of Burton, the West hill west of Burton and the beach line along the shore of outer Quartermaster Harbor.

The service area is outlined in Figure 2 (dashed line).

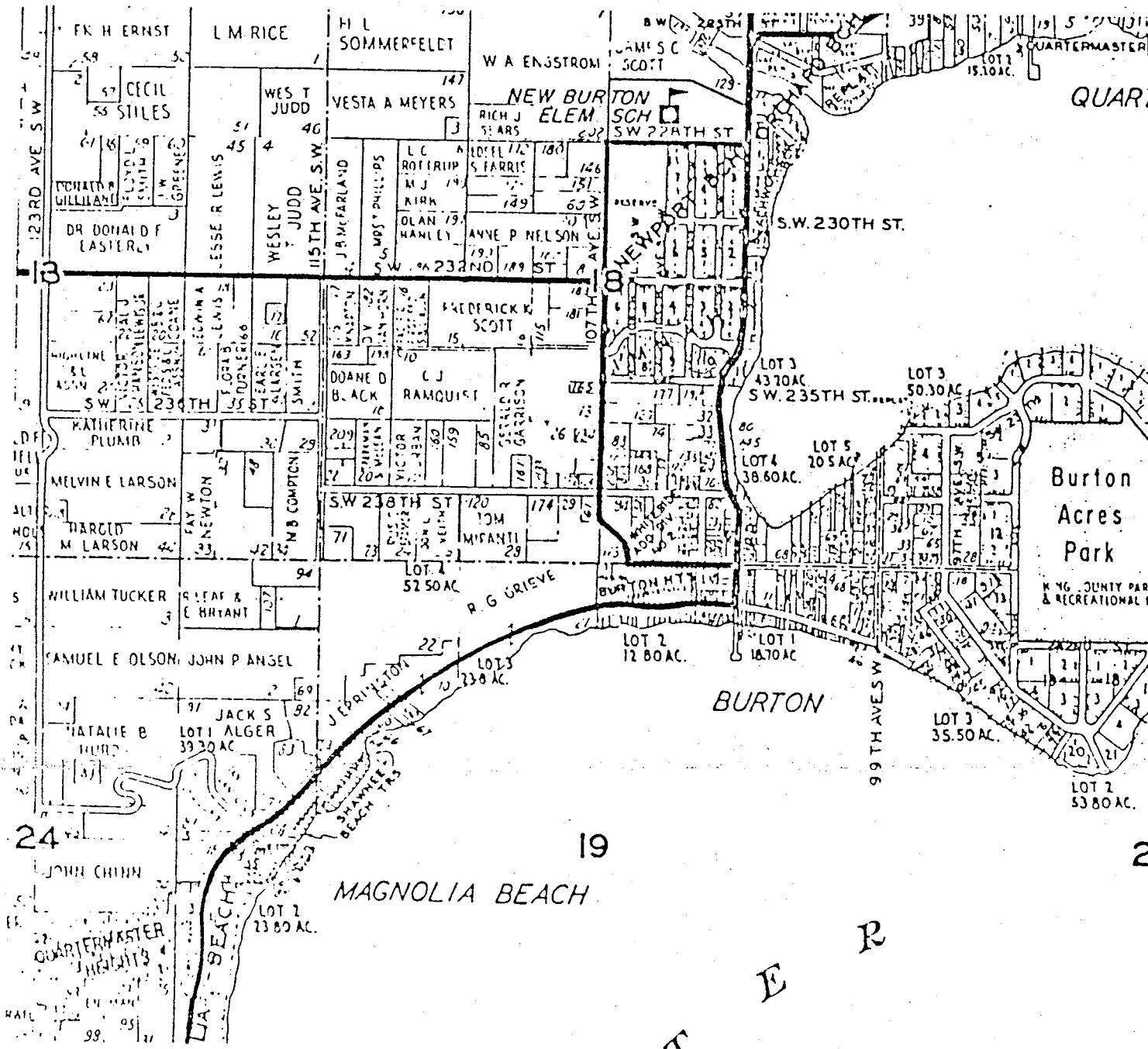
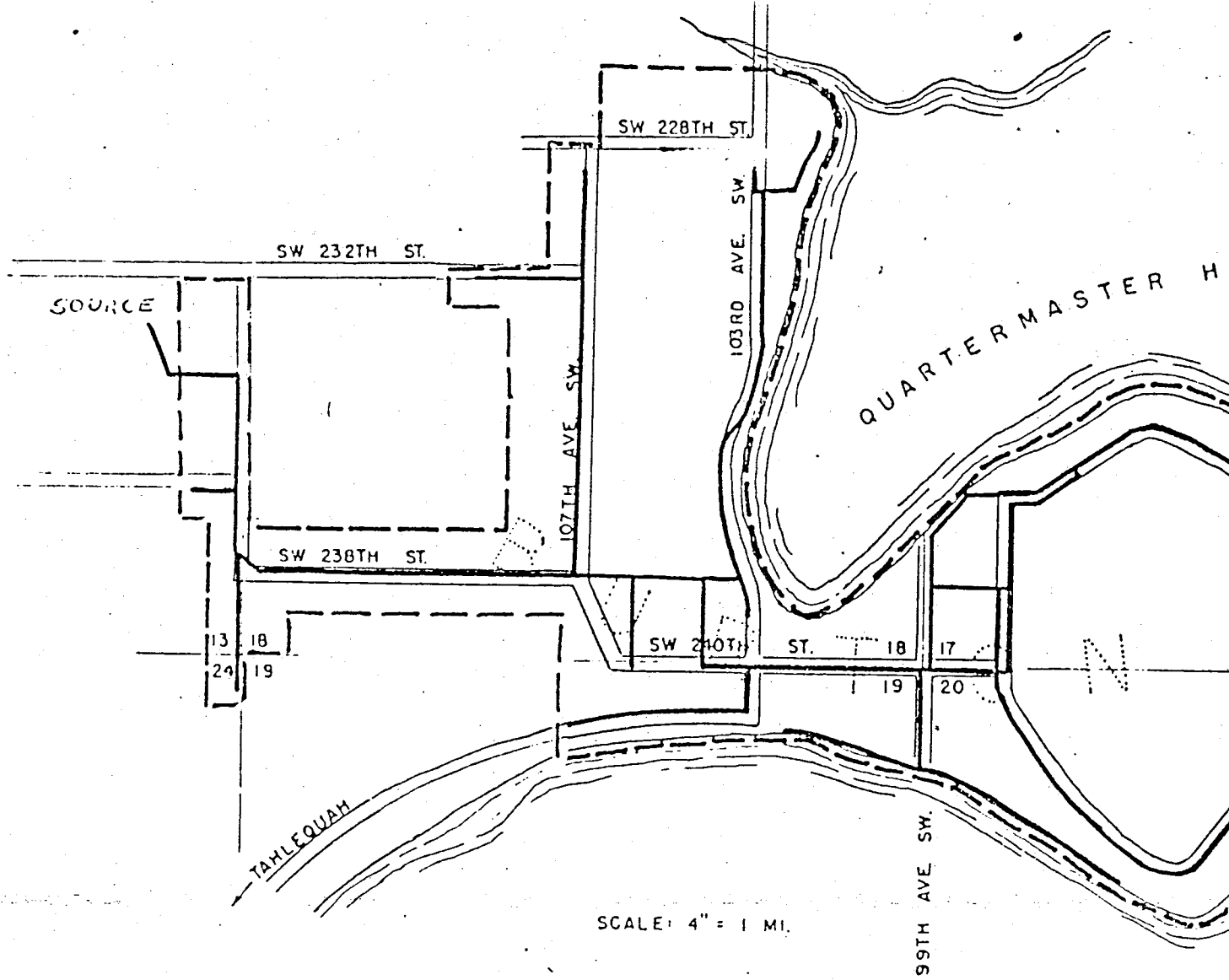


FIG. 1



SERVICE AREA
 OF
 BURTON WATER COMPANY
 BURTON, WASHINGTON

DISTRIBUTION

FIG 2

MAPS - cont'd

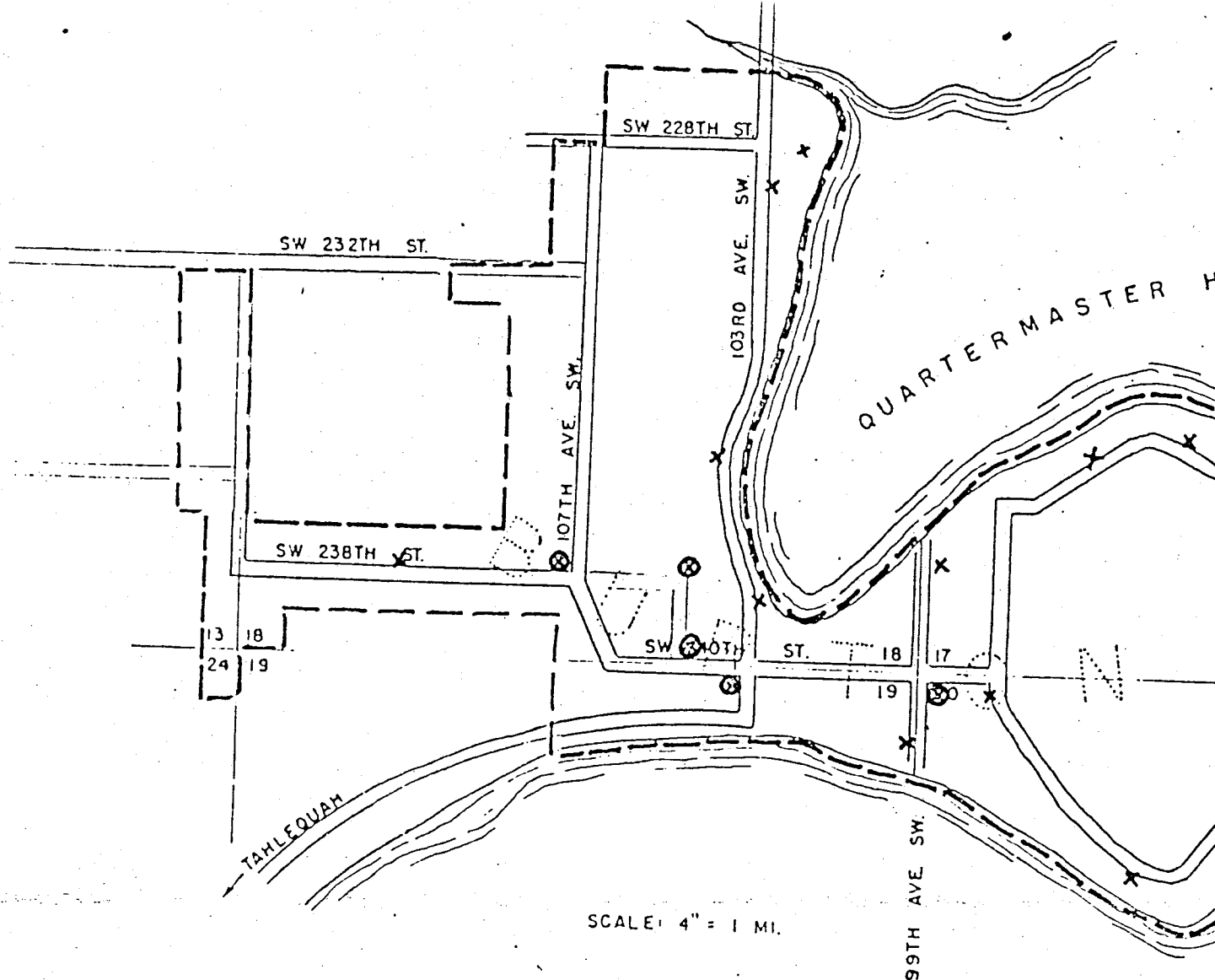
The distribution system is shown as a heavy solid line. A six-inch line runs from the source to Burton and onto the Peninsula to 97 Ave S. W. The other lines vary from 3-inch to 1½ inch diameter. For all future construction, larger mains will be installed to comply with King County Ordinance No. 468.

Fire hydrants are shown in Figure 3. Five hydrants are regulation. The others are 1½-inch standpipes installed at the request of adjoining property owners prior to 1960. The latter are all on 2-inch or smaller mains.

Pressures throughout the area are shown in Figure 4. These will drop about 25 percent during summer water periods.

The portion of the service area east of 107 Ave S. W. is zoned RS-15000. This zoning extends further west to 111 Ave S. W. along the beach road which forms the southern boundary to the service area. All other area west of 107 Ave S. W. is zoned General.

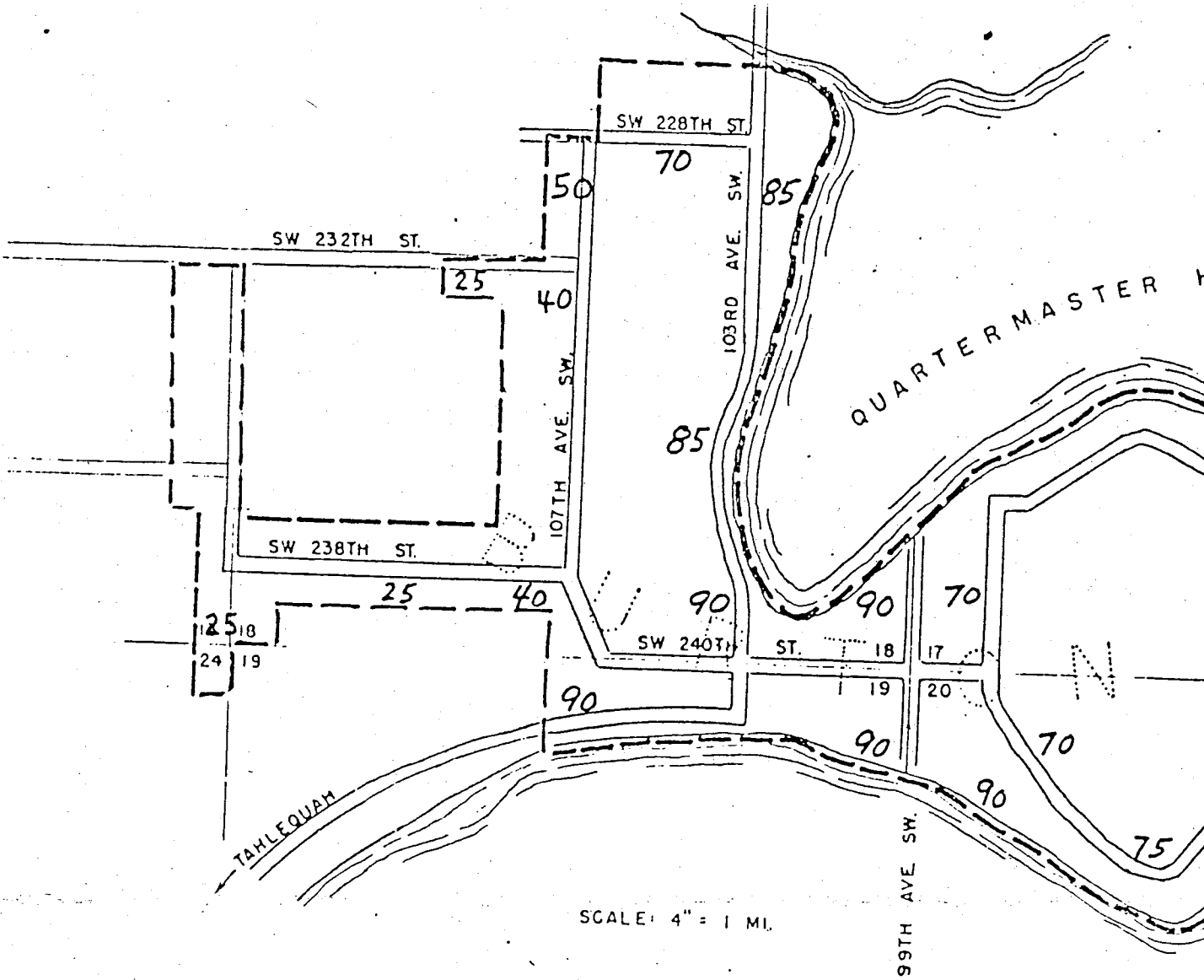
The entire area is used for residences except in Burton proper where there are several businesses, namely, a service station, grocery store, postoffice, marina, apartment house, and legal, dental and realty offices. The area also includes a church and a grade school.



SERVICE AREA
 OF
BURTON WATER COMPANY
 BURTON, WASHINGTON

FIRE HYDRANT
 ⊗ R
 × F

FIG. 3



SERVICE AREA
OF
BURTON WATER COMPANY
BURTON, WASHINGTON

PRESSURE
(psi)

FIG. 4

ENVIRONMENTAL REVIEW

An environmental check list form has been completed and is enclosed. Three extra copies are included, as requested in Ordinance No. 2638.

Submitted by:

Gerald R. Garrison

Gerald R. Garrison, Owner
Burton Water Company