

October 23, 1996

Introduced by: GREG NICKELS

Proposed No.: 96-911

ORDINANCE NO. 12552

AN ORDINANCE approving the Harbor
Heights Water System 1996
Comprehensive Water Plan.

PREAMBLE:

K.C.C. 13.24 requires approval of comprehensive plans
for water purveyors as a prerequisite to the granting
of right-of-way franchises and approval of right-of-way
construction permits.

On July 24, 1996 the King County Utilities Technical
Review Committee met to consider the plan and finding
it consistent with K.C.C. 13.24 recommended approval.

The Harbor Heights Water System 1996 Comprehensive Water
Plan is exempt from environmental review in accordance
with the State Environmental Policy Act.

BE IT ORDAINED BY THE COUNCIL OF KING COUNTY:

SECTION 1. The Harbor Heights Water System 1996
Comprehensive Water Plan, Attachment A, is hereby approved

12552

1 without conditions.

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3 INTRODUCED AND READ for the first time this 4th day

4 of November, 1996.

5 PASSED by a vote of 13 to 0 this 16th day of

6 December, 1996.

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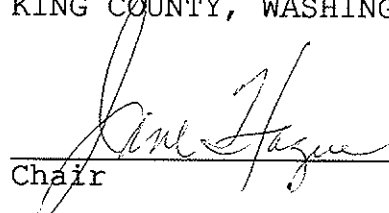
KING COUNTY COUNCIL
KING COUNTY, WASHINGTON

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Chair


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ATTEST:

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Clerk of the Council


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APPROVED this 26th day of December, 1996.

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for King County Executive

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Attachments:

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A. The Harbor Heights Water System 1996 Comprehensive
Water Plan.

HARBOR HEIGHTS WATER SYSTEM PLAN

I. BACKGROUND INFORMATION

Plan Approval by Utility

In meetings annually held from 1990-95, homeowners have voted to make whatever improvements are necessary to satisfy Washington D.O.H. requirements. Twelve homeowners have signed a Well & Water System Agreement recorded with King county which requires us to work to achieve and maintain this system.

September 1996 Utility Approval

In August 1996, homeowners received a copy of this plan as reviewed by King County in July 1996. As of September of 1996, the Harbor Heights Homeowners Association has voted to approve this plan. Homeowners will receive a photocopy of the additional conservation information added in September 1996.

Environmental Review

The Harbor Heights Water System Plan is exempt from environmental review in accordance with the State Environmental Policy Act.

II. NARRATIVE REPORT

Short History of Purveyor

Description of Existing and Requested Service Area

The Harbor Heights Water System currently serves 10 residential connections and a permanent population of 25 in the Harbor Heights community on Vashon Island. The Washington D.O.H. has approved construction of an improved Group A water system to serve this community and two additional connections.

The Harbor Heights community members formed the Harbor Heights Homeowners Association to provide a management body (Purveyor) for the water system. As a result of water quality violations of its spring box collection water system, the Association elected to construct a new system. This new system includes a well, a pump, a storage tank, and a distribution system.

Lot 2 of Section 25, Township 22 North, Range 2 East, W.M. in King County, Washington, according to U.S. Government Survey, including: Lots 15-22 in Blocks A and B, Lots 7-9 in Block C, Lots 1-10 in Block F, Lots 1-4 in Block G, and Lots 42, 43, 44 and 45 all in Harbor Heights Addition.

Purpose and Objective of Plan

This plan is intended to satisfy King County requirements for a water system plan and specifically to meet UTRC franchise application requirements for a new franchise.

Population Projection

The system currently serves 10 residential connections with an average population of 25 persons. As part of the purchase agreement for the property the new well is located on, the Association is obligated to extend service to two additional connections for a total of 12 residential connections. The total population for a total of 12 connections is estimated to be 30 persons.

The Harbor Heights Association does not wish to expand to serve more than 12 connections.

Water Supply

The proposed improvements were designed in accordance with the WSDOH Sizing Guidelines. Based on 12 connections and 800 gallons/connection/day, the required source capacity is 9600 gpd (.0096 MGD). Given the pump's capacity of 11 gal/min., the system has available .01584 MGD.

Water Demand

The new system has a source meter so that an actual usage record can be established. Usage for the months of March and April, 1996 was 120,000 gallons or an average of approximately .002 MGD, well below the state guideline of water sizing requirements of .008 MGD for 10 homes.

Forecast Needs

With increased summer usage of homes in the community,

Storage: Based on WSDOH sizing guidelines, the storage requirement is 7,200 gallons for standby and 3,900 gallons for equalizing storage. The total storage requirement is 11,100 gallons. Factors considered in choosing a tank included suitability for potable water, constructability, durability, and costs. A 12,000 gallon cylindrical steel tank was selected.

Gravity Distribution Hydraulics: The elevation of the proposed storage tank is on the order of 135 feet above the existing 10 connections. The distribution for these connections includes 190 feet of new 2-inch PVC pipe and approximately 150 feet of existing 2-inch PVC pipe. According to our engineer, flow velocities are within acceptable limits.

Booster System Hydraulics; The project includes a small booster system to serve the proposed 11th and 12th connections which are located at approximately the same elevation as the proposed storage tank. The booster system is required in order to provide minimum flow and pressure per WSDOH requirements. The booster system includes a centrifugal pump and bladder tank located inside the pump building.

Treatment and Water Quality

Water samples were analyzed for bacteriological, complete inorganic chemical and physical, volatile organic compounds (VOC's), and radionuclides. Manganese levels were 0.086mg/L which is slightly above the MCL of 0.05 mg/L. Also, the turbidity was measured at 2.0, which exceeds the MCL of 1.0. The well water meets all other Federal and State drinking water quality standards. Copies of the analysis reports are attached.

No treatment is planned at this time. The elevated turbidity is most likely a result of the well being newly constructed. Turbidity in new drilled wells frequently remains elevated until the fines are pumped out of the soil structure in the vicinity of the well screen. The turbidity should decrease below the MCL after the well is brought on line and begins pumping on a regular basis. The reported turbidity level of 2.0 NTU is not anticipated to pose a health threat. The source appears to qualify for an increase in the turbidity

A copy of the DOE permit #G126404P, granted in December of 1995, is attached to this report.

Fireflow Planning

Our distribution system has five 2-inch fire hydrants and two 2-inch fire hoses with which to fight fires. Please see map (3) for the location of these fire hydrants and hoses. In the event of a waterfront home fire, we will call King County District #13 and the Tacoma fire boat. We will communicate and work with Fire District #13 on Vashon Island to assess our fireflow system and upgrade it when necessary.

Additional Fireflow Information

In June 1996, Fire Chief Craig Harmeling advised Harbor Heights to install a 2-inch stand pipe hydrant on the water main near the water shed. He said that in the event of fire, Fire District 13 will:

1. hook onto the Harbor Heights 2-inch stand pipes,
2. bring water by truck, and
3. use beach pumps for additional water.

System Improvements

As mentioned in this report's opening narrative history of the Harbor Heights Water System, we are completing major new construction and we anticipate all this work to be complete on or before November 1, 1996. Equipment will be maintained and replaced when needed. We will continue to work closely with the Washington DOH to insure the quality of our system.

Conservation Element

The 1994 King County Comprehensive Plan requires aggressive water conservation practices and specific water conservation goals of 4% reduction in 1990 water usage by 1995 and an 8% reduction by 2000.

We have no data prior to March of 1996 which was the first month of operation for the new system. In March and April of 1996 we have used approximately 2,000 gallons/day according to

People in the Harbor Heights community are aware of the importance of conservation. We all experienced outages and shortages with the failing old system we were on. We will continue to remind people of conservation practices regularly by (for example) encouraging people to use: faucet flow restrictors, toilet tank water displacement devices, spray guns on hoses to prevent water wastage, garden planting with drought resistant plant varieties, and soaker hose or drip irrigation. We will also distribute usage data annually to show homeowners trends and results of conservation efforts.

At this time hidden leakage does not appear to be a problem based on late night observations of a "quiet" pump (i.e. no operation). We will consider the installation of individual home meters to aid in leak detection and monitor usage and we will establish a conservation rate structure if it seems necessary.

Additional Conservation Information

As of September 10, 1996, we have some more data. For March 10 to September 10, 1996 our metered source usage was 500,000 gallons. We have approximately 25 residents. The usage per day calculates as 111 gallons. The expected annual average should be significantly lower since the 111-gallon figure includes peak summer usage. 111 gallons puts us below the 120-gallon per day average stated in the Vashon Coordinated Water System Plan. Thus, Harbor Heights seems to be doing well in water conservation.

We will be expanding the system to 12 homes. We plan to maintain our system at 12 single family residential-use only connections with a projected constant population of about 30. We will not sell to nor buy water from other individuals or groups.

We will encourage our water users to educate themselves. We will distribute pamphlets such as the Washington State Dept. of Social and Health Services "Water Saving Guidelines." The Island's newspaper, The Beachcomber, prints articles related to conservation and aquifer protection. Water-saving devices are encouraged in the home and yard. These should be purchased and installed by homeowners convinced of the need for conservation. Additional advice to our users includes the use of low flow

With our small system our water managers and homeowners regularly drive and walk over most of the system daily. A careful lookout is kept for leaks. We repair any leaks as soon as possible. We are not planning the installation of individual service meters at this time, in part because we need to finish investing in our new system (e.g. a generator and final mainline installations). If our total average annual per capita use seems high relative to other Vashon Island water users at the end of the first two years then installation of service meters and a conservation rate structure will be needed.

Well Head Protection Program

Susceptibility Assessment: A susceptibility assessment was completed using the standard form contained in the WSDOH Well Head Protection Program Guidelines.

WHPA Designation: A preliminary Well Head Protection Area (WHPA) Designation was determined for the 6-month, 1-year, 5-year, and 10-year time of travel criteria using the calculated fixed radius method.

Potential Contamination Source Inventory: A community volunteer conducted the primary field work for developing the initial inventory of potential contamination sources. The volunteer was provided with detailed instructions, a base map and a complete list of things to look for. The resultant information provided by the volunteer indicates considerable diligence and appears quite thorough.

Upstream Water Uses: There are no known upstream water uses which might affect the ground water quality or quantity.

Status of DOH Operating Permit and Well Head Program

The Well Head Protection Area information has been submitted to the Washington DOH. They have issued Harbor Heights Water a "Blue" Operating Permit valid through November 1, 1996. The "Blue" category means the DOH has elected to evaluate the system (and WHPA) at a later date (upon completion of all construction).

Still to be completed before November 1, 1996:

- distribution lines across King County rights-of-way to 11th and 12th connections
- replacement of old distribution line with new line on end across King County rights-of-way.

Financing

Homeowners are assessed and moneys are collected for each phase before construction. Regular maintenance dues will be established this year once estimates are complete for all maintenance costs.

Adjacent Utility Issues

This is not applicable since there are no adjacent or nearby water utilities along the Pillsbury Rd. SW area. Other area homes are on private wells or spring systems. The proposed waterlines will not affect anyone else in the area. Most properties are too steep to build on. We do not plan on extending service beyond the areas requested in this plan so we will probably never contact neighboring utilities.

Developer Extension Policies

This is not applicable since no extension is planned or anticipated beyond existing and proposed water lines (see map (3)).

Consistency with Other Plans and Policies

This plan is consistent with the King County Comprehensive Plan and the Vashon Coordinated Water System Plan.