

January 19, 1994  
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INTRODUCED BY KENT PULLEN

PROPOSED NO. 94-59

ORDINANCE NO. **11237**

AN ORDINANCE approving the Orchard Grove Community Water Association Comprehensive 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 November 24, 1993 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 Orchard Grove Community Water Association Comprehensive Plan was approved by vote of the Orchard Grove Community Water Association Board of Directors on October 17, 1993.

The Orchard Grove Community Water Association is exempt from issuing an environmental review for the Plan in accordance with the State Environmental Policy Act.

BE IT ORDAINED BY THE COUNCIL OF KING COUNTY:

SECTION 1. The Orchard Grove Community Water Association Comprehensive Plan, attached as Exhibit A, is hereby approved without conditions.

INTRODUCED AND READ for the first time this 31<sup>st</sup> day of January, 1994.

PASSED by a vote of 12 to 0 this 22<sup>nd</sup> day of February, 1994.

KING COUNTY COUNCIL  
KING COUNTY, WASHINGTON

Kent Pullen  
Chair

ATTEST:

Janet Masuko  
Deputy Clerk of the Council

APPROVED this 2<sup>nd</sup> day of March, 1994

Doug Lohme  
King County Executive

Attachment:

A. Exhibit A: Orchard Grove Community Water Association Comprehensive Plan dated December 1993.

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ORCHARD GROVE COMMUNITY WATER ASSOCIATION  
COMPREHENSIVE PLAN  
WITH CONVERSTION PLAN ATTACHED

PREPARED BY  
GORDON GRONDIN, ASSOCIATION PRESIDENT  
DECEMBER 1993

## INTRODUCTION

The Orchard Grove Community Water Association is a Non-Profit Community owned water system incorporated in the State of Washington in 1936.

The water system is classified A by the Washington State and King County Department of Health. Washington State ID Number 640708.

The water system is located in the Maple Valley area of East King County within the Tahoma Raven Heights Zoning Area and the East King County Coordinated Water System Plan Area (CWSP). Map A

The Tahoma Raven/Heights Communities Plan designated the area as GR-5 (Growth Reserve, 1 home per 5 acres). The 1985 King County Comprehensive Plan designated the area as Urban. However, the Growth Management Planning Council Countywide Planning Policies has recommended that this area be designated as Rural. In either case, the Orchard Grove Community Water Association Comprehensive Plan is consistent because the water system only serves existing lots created under earlier zoning.

There are no plans to expand the water system beyond the plat of Orchard Grove.

The Orchard Grove residential area is bounded by the Cedar River on the south and west, by the abandoned Chicago, Milwaukee Saint Paul and Pacific Railroad on the north and east. The railroad tracks have been abandoned and are now in the ownership of the King County Parks Department.

The water system uses collected spring water from the base of the Cedar River Valley walls, and collects this ground water into two concrete holding tanks. The water source, storage tanks and distribution facilities are sited on a 4 acre parcel owned by the association. See Map B

**POPULATION**

The system has thirty nine services with the potential of four more services that are not likely to be added in the near future. A population of 80 persons as of September 1993 are serviced by the water system. Population will remain stable during the planning period.

**REASON FOR APPLICATION**

Renewal of water franchise to maintain and operate pipes for the purpose of conducting water and maintaining a water system for public and private purposes on certain county roads and streets of King County, WA.

First Franchise granted in 1942 Number 228  
Second Franchise granted in 1968 Number 588

**DESCRIPTION OF EXISTING SERVICE**

The existing system serves only the original plat of Orchard Grove. Together with the large lots on the east side of the Dorre-Don road that front the Orchard Grove Plat. Maps A-B-C

On the dedicated road in the plat of Orchard Grove in Section 15, Twp, 22 N. R. 6 E.W.M.

**PURPOSE OF PLAN**

Renewal of Franchise

**OBJECTIVES OF PLAN**

To meet King County land use planning  
Develop water conservation plan  
Outline upgrades to existing system to meet King County, Washington State and Federal requirements

POPULATION PROJECTION

The water system has 39 services with a potential of four unused services that are not likely to be added in the future. Door to door survey validated population to be 80 persons. The population of 80 persons will remain stable during the planning period. There will be no expansion of system.

WATER SOURCE AREA

The water source is from an under ground aquifer that flows out of the Cedar River Valley walls, within the spring house and is funnelled into a three inch pipe that runs into two storage tanks. Diagram A

Spring Building Dimensions: 20 ft by 19 ft

## Construction:

Concrete Foundation  
Walls Wood and Screening  
Roof Framing: Wood  
Roof Material 2' by 8' Sheets of Metal Roofing

There is no evidence of any surface stream or runoff above the spring.

STORAGE TANKS (TWO) Diagram A

## Building Dimensions:

1. 11 ft by 20 ft with a holding capacity of 10,000 gals
2. 11 ft by 32 ft with a holding capacity of 15,000 gals

Total of 25,000 gals

## Construction:

Concrete Walls and Floors  
Roof Framing: Wood  
Roofing Material 1' by 8' Metal Sharp Lock Sheets  
Screening and Tin are used for Sanitary Seals

**CHLORINATION**

Chlorination is done directly into the water main based on water flow by the means of a new LMI Metering Stroke Pump and a new Insertion Flow Meter powered by a VDC 12 volt battery

Building Dimensions: 6ft by 8ft

Construction: Concrete Walls/Floors  
Roof Framing: Wood  
Roofing Material 2' by 8' plastic sheets

**DISTRIBUTION**

Water is distributed into the system via 6" piping. The 6" main runs from the holding tanks to the end of SE 238th ST where it crosses 238th ST to the north side and runs on the right side of the road to the intersection of SE 238th ST and Dorre Don Way and across the road to the west side of Dorre Don Way and runs to the end of the Orchard Grove plat. Diagram B

**WATER RESOURCES**

The system has on file a Certificate of Surface Water Right, permit number 15853 issued by the Washington State Department of Water Resources dated March 17, 1970. The permit allows the diversion of water from an unnamed spring for community domestic supply to 50 services.

### WATER QUALITY

The water system has on file three previous inorganic chemical analysis tests on the raw source water. The 1982, 1988 and 1992 tests show a very good water quality. The recent volatile organic chemical report in June of 1992, shows no detectable amounts of any of the 51 volatile organic chemicals nor any detectable amounts of Trihalomethanes. Lead testing was done in 1985 with the results being satisfactory.

### SOURCE PROTECTION

The water source is within a 20' by 19' inclosed building with a wood roof and wooden walls called the spring house. The spring house is within the fenced area of the water site. Fencing consists of barb-wire around the 3 acre parcel with a locked gate at the entrance. The water source spring house, storage tanks and distribution areas are enclosed with a six feet cyclone fence with rounded barb-wire on top and a locked gate. Diagram A and System Improvements Section Number 3.

### FIREFLOW

The Orchard Grove water system does not have documented fireflow.

King County Fire District 43 does not have a written plan but utilizes a Class assignment system for all areas within their district to determine the requirements if and when they are called.

The Orchard Grove Community is in Class 4.

A class 4 rating includes the following:

Use existing hydrants if available, self contained tanker trucks backed up by self contained tanker trucks.'

### System Improvements

1. Replace old Hydraulic Driven Hypo-Chlorinator.  
Implementation 1993

A new LMI Metering Stroke Pump, Insertion Meter and a new solution holding tank was installed in February of 1993.

2. Replace Existing Storage Tank Roofs  
Implementation 1993

One storage tank roof was replaced in July of 1993. Second storage tank roof is scheduled to be replaced in Nov of 1993.

3. Replace Existing Chlorinator Roof  
Implementation 1994

4. Spring Infiltration Gallery Improvements (Water Source)  
Implementation 1994

The new spring infiltration gallery will include a new cut-off wall, a new buried collection pipe system that gathers the spring water, and a new watertight membrane that overlays the spring collection zone. Diagram C

### Financing Plan

Based on requirements financing will be by Internal Billing, Assessments, Bank Loans and Federal Grants.



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CONSERVATION PLAN  
DECEMBER 1993

The Orchard Grove Water Assoc has had a water conservation program in place for last thirty years and is unique in that the water source is constantly filling both storage tanks, if the water is not consumed, it simply flows out the overflow pipes and down the hillside. The water system has not run out of water in fifty seven years so it would seem that the present source quantity is adequate for the existing services.

#### WATER CONSUMPTION

A new flow meter to monitor water consumption was installed in April of 1993 therefore no historical consumption records are available. Until such time as a good historical baseline can be established consumption can only be predicated by use of the Washington State Department of Health Sizing Guidelines.

A good baseline for water consumption will be developed in April of 1994. A minimum of 4 percent total reduction in consumption from the average baseline figures will be achieved by 1996 as required by the CWSP adoption ordinance. The Washington State Department of Health requires the source quantity be 800 gallons per day per service. Using a value of 39 services times 800 gallons per day, gives 32,800 gallons per day required source water. The current source capacity of the Orchard Grove Water Association is 48 gpm, which gives a daily total source capacity of 69,120 gallons per day which is more than required by State Standards.

The system has not ran out of water in the past fifty seven years so it would seem that the present source quantity is more then adequate.

#### POPULATION PROJECTION

The water system has 39 services with a potential of four unused services that are not likely to be added in the future. There is a population of 80 persons that was the result of a door to door survey. The population of 80 persons will remain stable during the planning period. There will be no expansion of the system.

## RATES

The most recent rate for supplying water to the users is \$25.00 dollars per month. The rate was raised in Sept of 1992 by a vote of the stockholders. This is a flat rate if the water is used or not.

## DETECTION OF WATER LEAKS

A regular and systematic program is in place to monitor water lines and services. The main water system and water facilities are checked daily. Door to door monitoring by water district representative is done twice a year. This check is done in the spring and late fall to monitor for any leaks and to identify and pipes that should be wrapped for cold weather. Users are also instructed to report any water problems that they may see. All suspected problems are immediately checked out and dealt with as necessary.

## WATER METERS

At this time there are no individual water meters on the water system, there is however a flow meter on the main water line at the water facility site to monitor total consumption.

Service meters will be considered when the water district contemplates a major water line replacement. This replacement will not likely happen within the planning period. Based on a recent King County project, installing individual meters would cost \$400.00 per service for a total cost of \$15,600 dollars.

## WATER CONSERVATION

A yearly letter is sent in the April billing to all services outlining the watering schedule guidelines and recommendations during the summer months. Even and Odd watering days are assigned from May 1 to Oct 1, a time limit is set for outside watering (this year is was eight hours per day), no outside watering after 9:00 pm, and a recommendation to water only during the early morning and late afternoons. This has been a procedure for the water system for the last forty years. Users are told if they are not in compliance and if they are wasting water by watering roads, rocks, etc. Water hoses are shut off by water district personal if not in compliance.

## CONSERVATION EMERGENCIES

If the water storage tanks become to low all services are immediately notified by phone and door to door to stop watering. With the existing conservation plan this as not been required in the last twenty years.

In the case of extreme water shortage, broken water mains or any other on foreseen problem that stops or reduces the water flow. The problem is immediately isolated and the appropriate action is taken based on the problem which may include by-pass hoses, flow restriction and other available procedures to continue water to supply. Notification to all services is given stating the problem and what they can do to help is done by phone and door to door. Notes are posted on each home if no one answers stating the problem who to call for information.

During the summer months from May to Oct the same notification method would be used if required.

All services have a list of names and phone numbers to call if there is no water available.

**LARGE SCALE IRRIGATION**

There is no large scale irrigation on the water system.

**PRESSURE REDUCING**

A reduction in PSI can be achieved but could be in violation of existing fire codes.

**NEW CONSTRUCTION**

The new Washington State Law limits the number of gallons a toilet can have. This will be used when replacements or new units are required. Low-flow shower and faucets kits are recommended for replacement and in any new construction.

**ENCOURAGE LOW WATER USE LANDSCAPING**

Letters and material outlining low water usage landscaping ideas are sent to all services.

**AGREEMENTS WITH OTHER SYSTEMS**

At the present time the water system has no formal agreement with any other water system. Any formal agreement with another system would be as a backup system only in emergencies to supply water.

**TECHNICAL ASSISTANCE/PUBLIC EDUCATION**

For several years the water system has been sending out water conservation tips and technical literature to all services. This together with the news media and yearly stockholders meeting all users are well informed on all aspects of the water system we face today and in the future.  
(See Conservation Tips Pages 10 and 11)

## WATERING CONSERVATION TIPS

If we change our habits. We can reduce our water usage by 40%

## YARD/OUTSIDE

Grass needs water to stay green and fresh. In the Puget Sound area, most lawns need only about one inch of water a week. If you use sprinklers, put a clean, empty tuna can on a corner of the lawn. When the can is full, you've given your lawn enough water. Step on the grass. If it springs back after you remove your foot, it doesn't need to be watered.

Look at your plants, If the leaves turn yellow, they're getting too much water, but if they're wilted, they need water. If you see water running off your lawn or forming puddles, turn off the water! Your lawn has had enough.

✓ **Recycle** the water from your fish tank by using it to water plants. It makes great fertilizer!

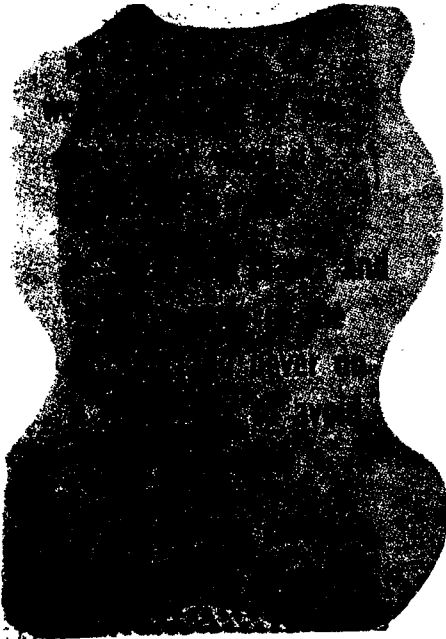


✓ **Use** a bucket and a shut-off nozzle when you wash the car or the dog.

✓ **Put** bark mulch around trees and plants so water won't evaporate as quickly.

✓ **Put** some buckets or a barrel outside to collect rainwater. Your local hardware store probably has some rain barrel ideas, too. Use your rainwater in the garden.

In great-grandmother's day, rainwater was saved especially for shampoos.

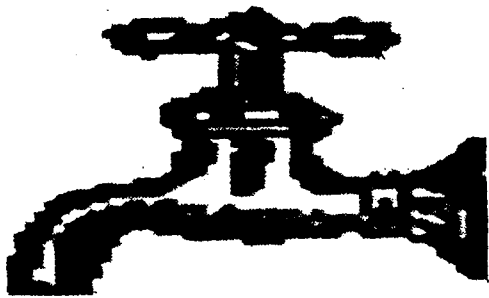


WATERING CONSERVATION TIPS

# Bathroom

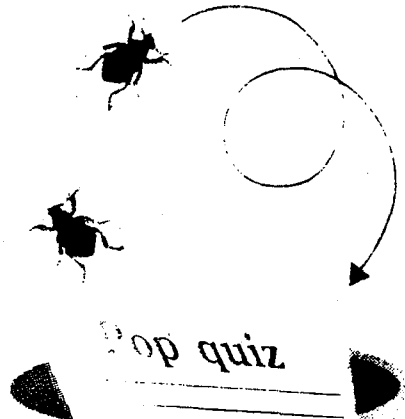
✓ **Check** for leaky toilets by placing a little food coloring in the toilet TANK. Wait 15 minutes. If the color seeps down into the BOWL, you have a leak.

A slow drip can waste 15-20 gallons in a day.

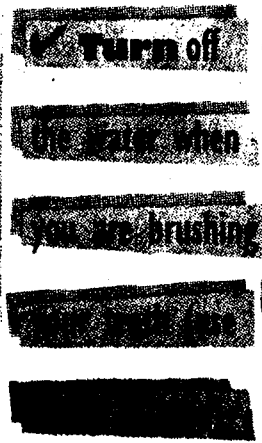


✓ **IF** you take a bath, put the plug in before you run the water and fill the tub only halfway.

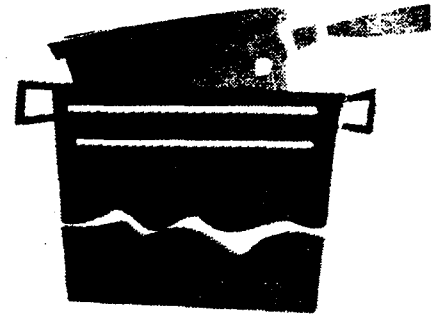
✓ **Put** the stopper in the sink and let the water fill up when you're washing your hands.



✓ **Use** the bathroom waste-basket — not the toilet — to dispose of paper and bugs.



# Kitchen



✓ **Run** the dishwasher only when it's full.

✓ **Use** two basins when washing dishes by hand, one for washing and one for rinsing, rather than running the faucet.

✓ **Keep** a pitcher of water in the refrigerator instead of running the faucet until the water gets cold.

# Laundry

✓ **Use** the washing machine for full loads only.

**USER ASSISTANCE**

The water system provides assistance to all services as requested.

**CONSERVATION MEASURES CURRENTLY IN PLACE**

Even and Odd Watering Days

Limited Time On Watering

Literature On Conservation Tips Sent To All Services

Recommendations For Conservation

Daily Monitoring

Water Saving Kits Distributed To All Services In 1982

**PROPOSED CONSERVATION MEASURES**

Water Saving Kits Distributed To All Services That Include:

Low Flow Showerheads

Toilet Displacement Bottles/Bags

Faucet Restricters

See Implementation Chart Page 11



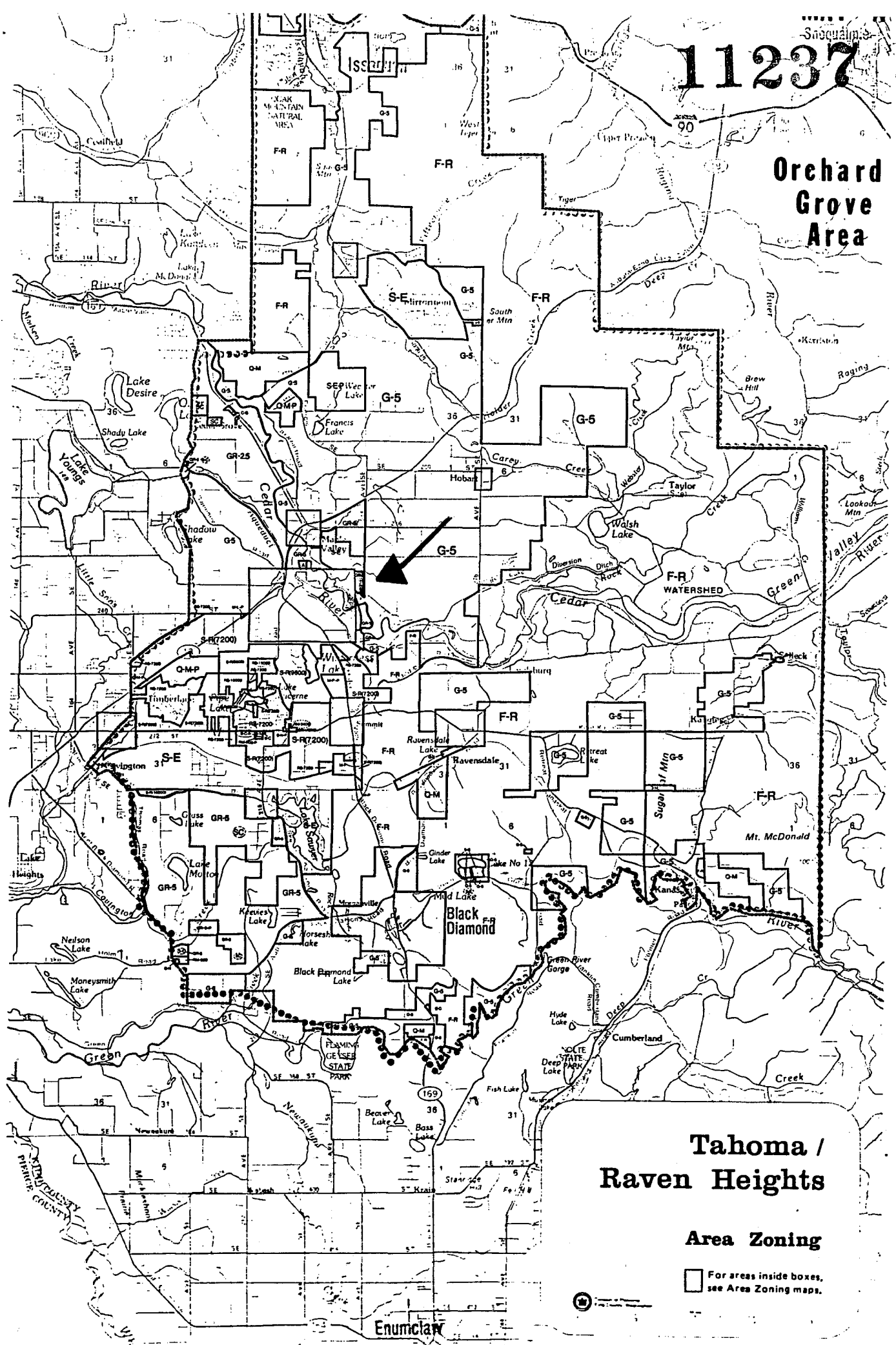
The following chart is based on low flow showerheads at 2.5 gpm that will replace 5 gpm showerheads. Each service has 2.5 people. Toilet displacement devices will replace one gallon of water per flush with six flushes per day per person. Percent of gallons saved is based on 800 gals per service.

WATER CONSERVATION GOALS						
	Number of Services with Improvements	Percent of Total Number Complying	Total Gallons Saved	Percent of Reduction	Total Gallons Saved Per Year	
<b>1994</b>						
Install Low Flow Shower Heads	20	50%	125	1.0		
Install Toilet Displacement Devices	18	46%	270	1.0		
						98675
<b>1995</b>						
Install Low Flow Shower Heads	11	28%	69	1.0		
Install Toilet Displacement Devices	12	31%	180	1.0		
						65769
<b>1996</b>						
Install Low Flow Shower Heads	5	13%	31	1.0		
Install Toilet Displacement Devices	5	13%	75	1.0		
						27406
<b>1997</b>						
Install Low Flow Shower Heads	3	8%	19	1.0		
Install Toilet Displacement Devices	4	10%	60	1.0		
<b>TOTAL END OF 1997</b>	<b>39</b>	<b>100%</b>		<b>8%</b>		<b>21919</b>
<b>TOTAL GALLONS SAVED FROM PRESENT:</b>						<b>213769</b>
<b>TOTAL CONSERVATION REDUCTION FROM PRESENT:</b>						<b>8%</b>

**SUMMARY**

Conservation is critical to the Orchard Water System. But with the existing conservation plan in place and the continued effort on conservation we can and will continue to reduce our water consumption by the required amount. Orchard Grove Water users have cooperated well in bringing down the consumption rate and have made a continued effort to conserve water. All services are aware of the danger of no water, therefore the most serious concern of the Orchard Grove Water System is the protection of the aquifer that we have very little control over,

## Orchard Grove Area

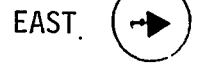


### Tahoma / Raven Heights

#### Area Zoning

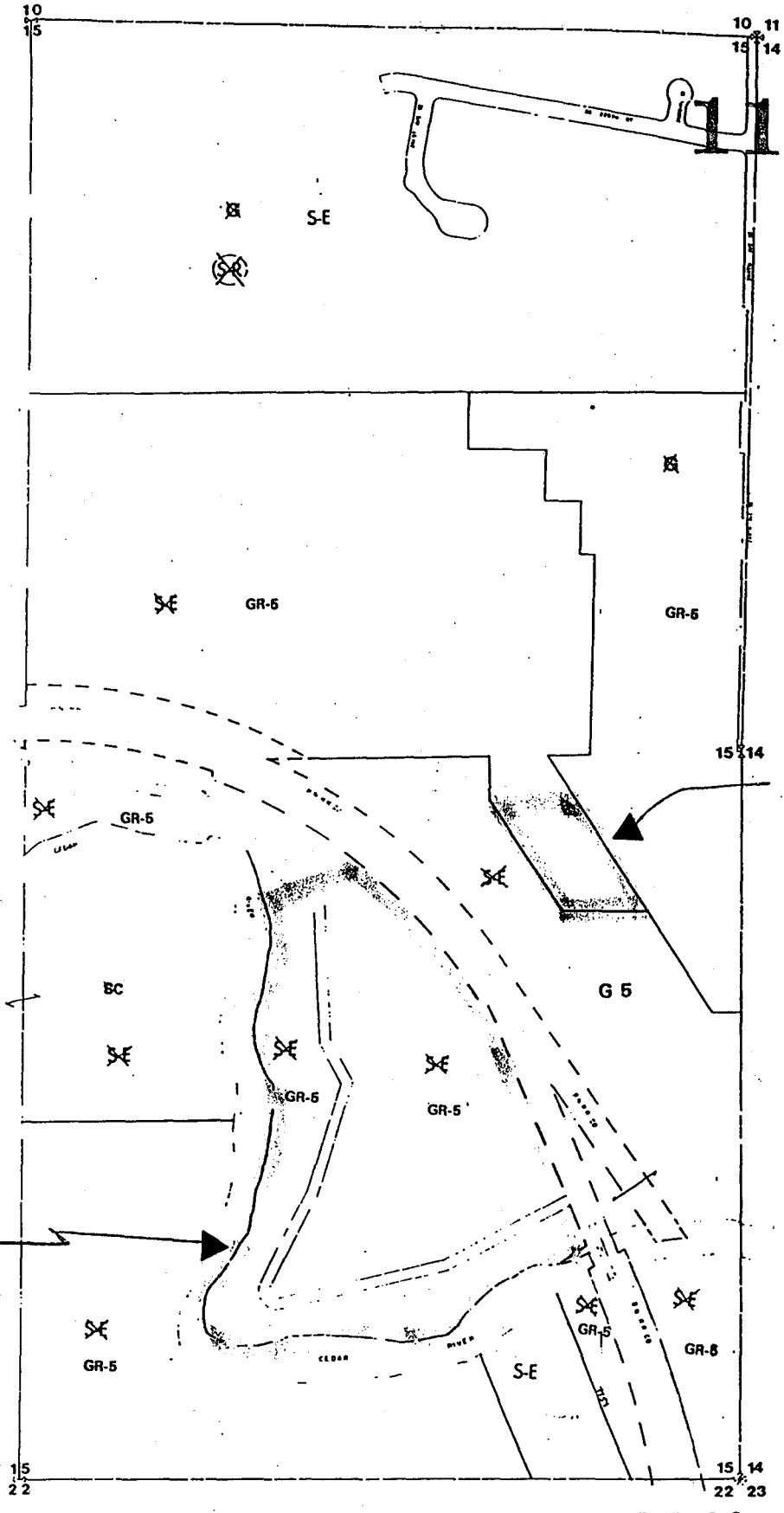
□ For areas inside boxes, see Area Zoning maps.

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WATER SOURCE  
STORAGE TANKS  
DISTRIBUTION  
FACILITIES

ORCHARD GROVE



E. 15-22-6

ORCHARD GROVE PLAT

MAP C

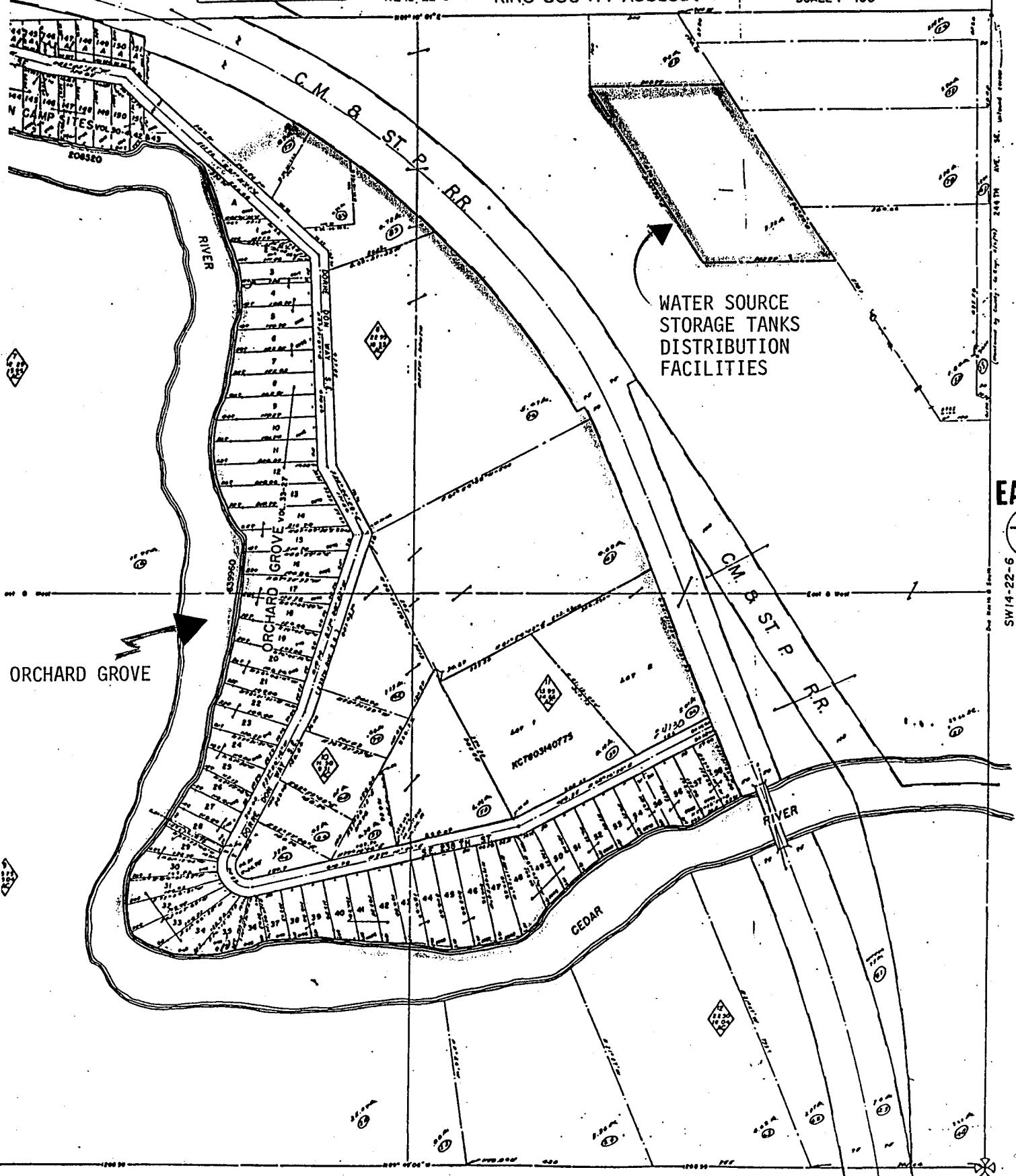
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S.E. 15-22-6

THIS MAP IS FOR THE PURPOSE OF ASSISTING IN LOCATING YOUR PROPERTY AND IS NOT GUARANTEED TO SHOW ACCURATE MEASUREMENTS.

NE 15-22-6 KING COUNTY ASSESSOR

SCALE 1"=100'

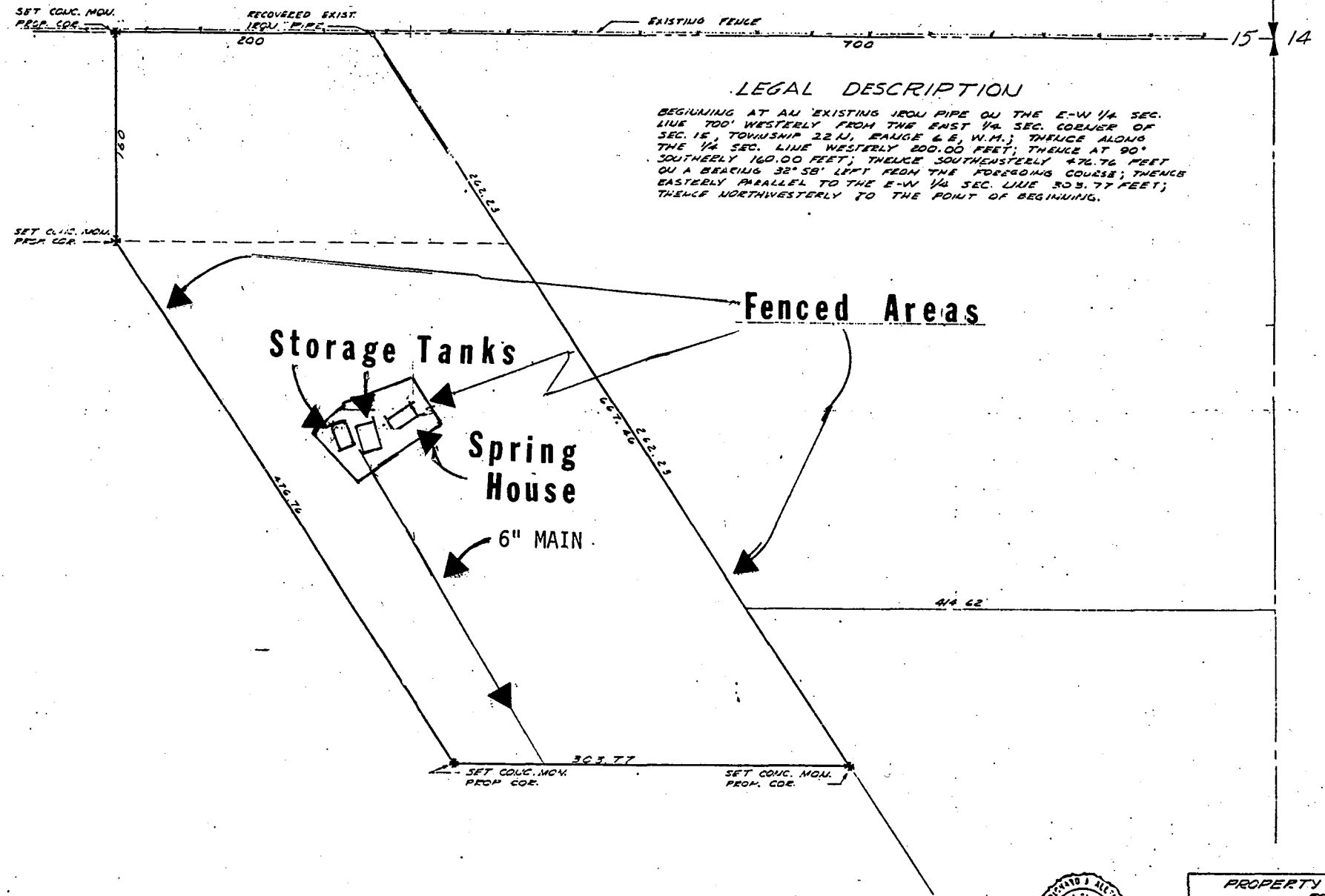


SW 14-22-6

NE 22-22-6

Map: This map is based on data obtained from the G.L.S. of the County of King and is not guaranteed to show accurate measurements.

SE 1/4 SEC 15, T22N, R6E

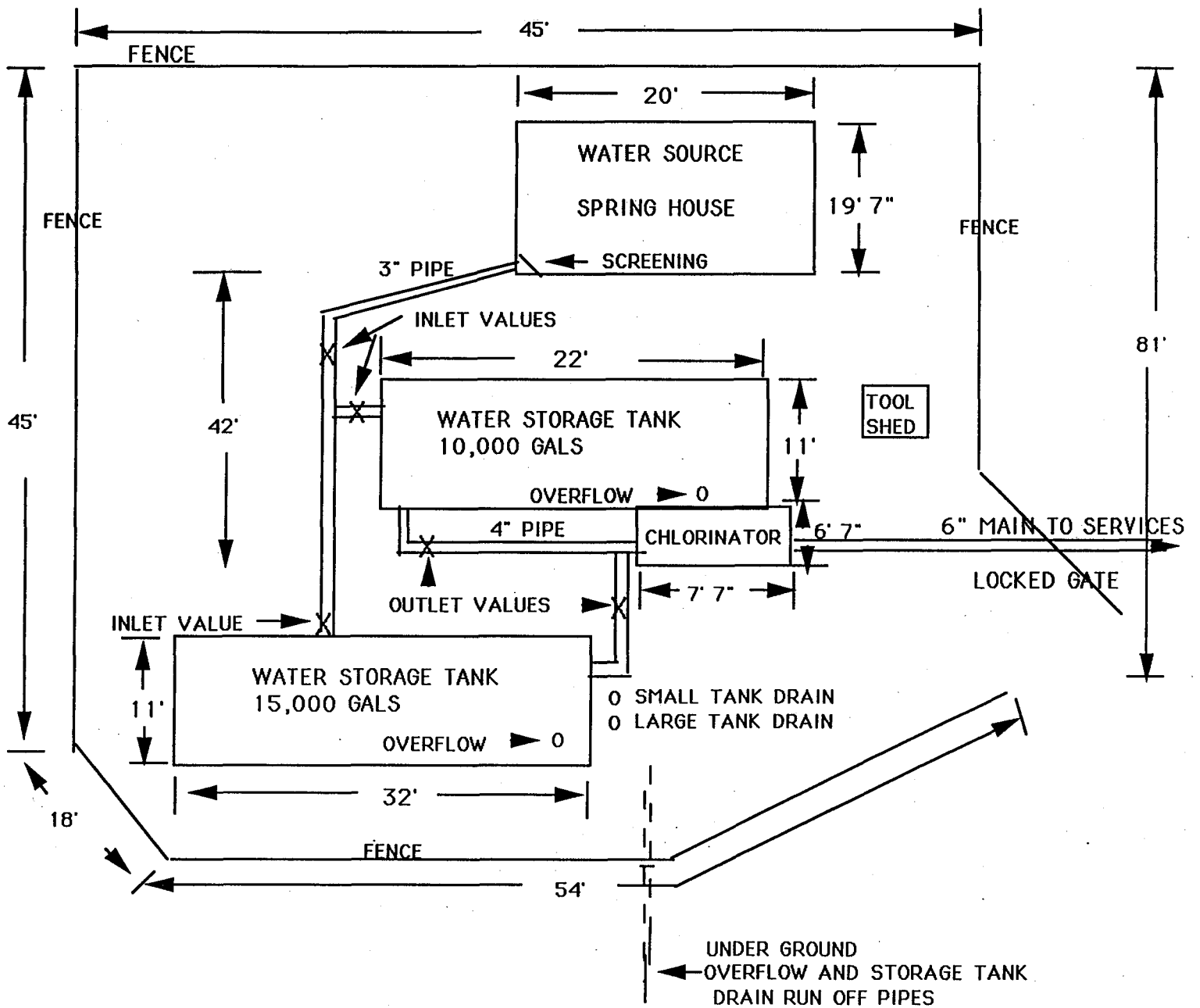


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PROPERTY SURVEY  
 FOR  
 ORCHARD GROVE WATER  
 ASSOCIATION  
 MAPLE VALLEY, WASHINGTON  
 SCALE: 1"=50' DATE: 7 AUGUST, 195

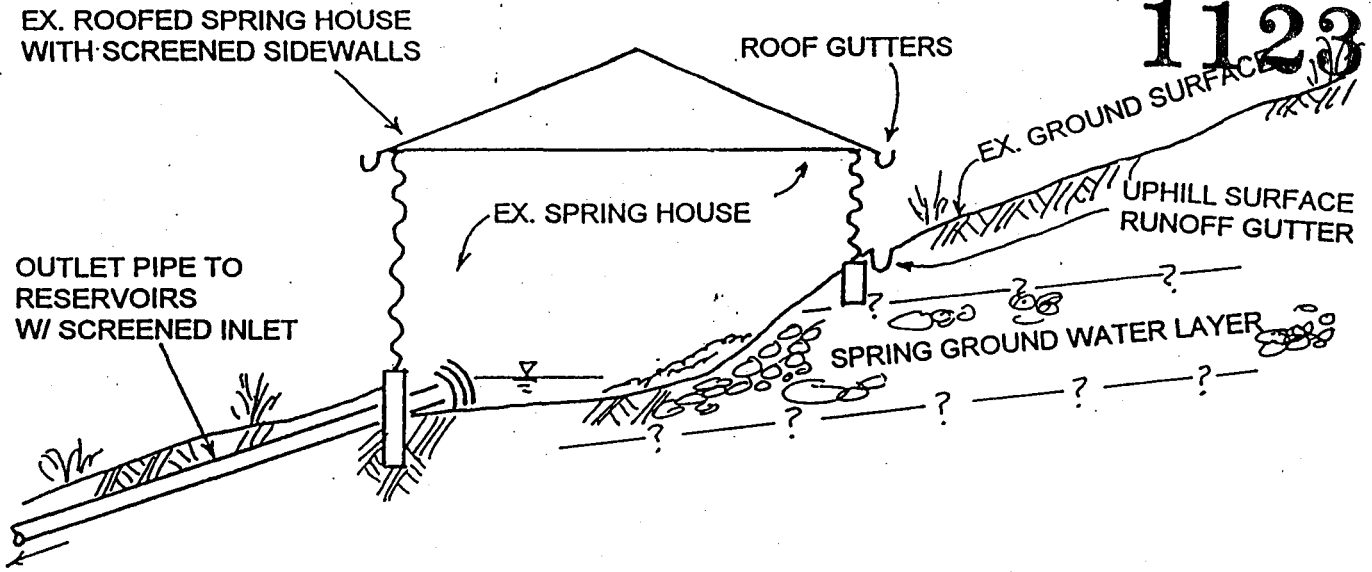
## WATER SOURCE, STORAGE TANKS, CHLORINATOR AND DISTRIBUTION FACILITIES



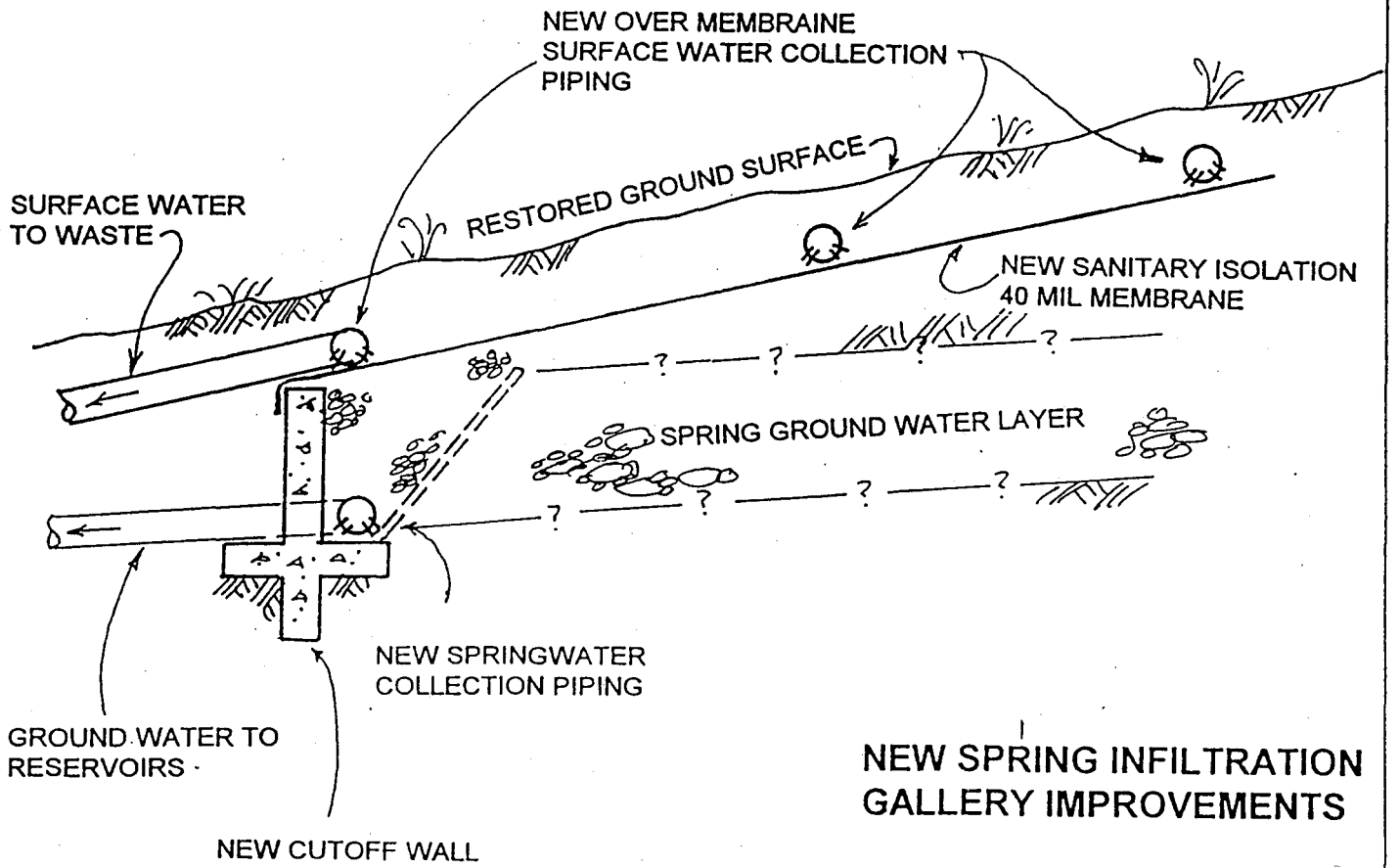




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EXISTING SPRING HOUSE



EXISTING & NEW SPRINGS