STATE OF WASHINGTON
**DEPARTMENT OF ECOLOGY**

***PROTESTED***
***DRAFT REPORT OF EXAMINATION***
***To Appropriate Public Waters of the State of Washington***

| APPLICATION DATE | APPLICATION NO. |
|---|---|
| October 12, 2009 | G1-28639 |

NAME

Island County Public Transportation Benefits Area, dba Island Transit,
ATTN: Martha M. Rose

| ADDRESS/STREET | CITY/STATE | ZIP CODE |
|---|---|---|
| 19758 SR 20<br>P.O. Box 1735 | Coupeville, WA | 98239 |

**PUBLIC WATERS TO BE APPROPRIATED**

SOURCE

Groundwater

TRIBUTARY OF (IF SURFACE WATERS)

| MAXIMUM CUBIC FEET PER SECOND | MAXIMUM GALLONS PER MINUTE | MAXIMUM ACRE-FEET PER YEAR |
|---|---|---|
| | 50 | 8.92 |

QUANTITY, TYPE OF USE, PERIOD OF USE

0.45 afy Industrial use, year-round
1.85 afy Domestic use, year-round
6.62 afy Irrigation use, seasonally from April 1 to October 15

**LOCATION OF DIVERSION/WITHDRAWAL**

APPROXIMATE LOCATION OF DIVERSION—WITHDRAWAL

675 feet south and 25 feet west from the NE of Section 2, T. 31 N., R. 01 E.W.M.

| LOCATED WITHIN (SMALLEST LEGAL SUBDIVISION) | SECTION | TOWNSHIP | RANGE | WRIA | COUNTY |
|---|---|---|---|---|---|
| NE1/4 NE1/4 | 2 | 31 N. | 01 E.W.M. | 6 | Island |

| PARCEL NUMBER | LATITUDE | LONGITUDE | DATUM |
|---|---|---|---|
| R13102-484-4840 | 48.208361 | -122.637522 | NAD83 HARN |

**LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED**
**[Attachment 1 shows location of the authorized place of use and point(s) of diversion or withdrawal.]**

Attachment 1, shows the location of the authorized place of use and point of withdrawal

Beginning at the NE corner of Section 2, T31N R01E W.M. Thence S 0° 2′ 49″ W along the East boundary of the aforementioned section, 155.68 ft, thence S 87° 55′ 02″ E 120.91 ft to the true point of beginning. Thence S 01° 31′ 12″ W 593.24 ft, thence S87° 57′ 30″ W 1282.79 ft, thence N 1° 36′ 34″ E 332.27 ft, thence S 87° 54′ 44″ E 330.01 ft, thence N 1° 53′ 37″ E 350.23 ft, thence S 88° 05′ 59″ E 947.53 ft more or less to the point of beginning. This description to include the following parcels as they existed as of 1/1/2007: R13102-485-5200 (2.61 Acres), R13102-485-4950 (2.60 Acres), R13102-485-4800 (2.54 Acres), R13102-475-4600 (2.58 Acres), R13102-495-4540 (1.00 Acres), and R13102-465-4300 (2.50 Acres).

## DESCRIPTION OF PROPOSED WORKS

8-inch well drilled to 190 feet screened from 160 to 175 feet below ground. An existing water system is in place to distribute water to the current operations building. New construction will expand the system to include bus maintenance/washing facilities and irrigation for on-site landscaping. The final system will serve 75 to 100 staff.

## DEVELOPMENT SCHEDULE

| BEGIN PROJECT BY THIS DATE | COMPLETE PROJECT BY THIS DATE | WATER PUT TO FULL USE BY THIS DATE |
|---|---|---|
| Begun | December 31, 2025 | December 31 2030 |

## PROVISIONS

This authorization is subject to the following provisions:

**Meter Installation**
An approved measuring device shall be installed and maintained for each of the sources authorized by this water right in accordance with the rule "Requirements for Measuring and Reporting Water Use", WAC 173-173. http://www.ecy.wa.gov/programs/wr/measuring/measuringhome.html

WAC 173-173 describes the requirements for data accuracy, device installation and operation, and information reporting. It also allows a water user to petition Ecology for modifications to some of the requirements. Installation, operation and maintenance requirements are enclosed as a document entitled "Water Measurement Device Installation and Operation Requirements".

**Record, Report upon Request by Ecology**
Water use data shall be recorded monthly and maintained by the property owner for a minimum of five years, and shall be promptly submitted to the Department of Ecology upon request.

Department of Ecology personnel, upon presentation of proper credentials, shall have access at reasonable times, to the records of water use that are kept to meet the above conditions, and to inspect at reasonable times any measuring device used to meet the above conditions.

**Proof of Appropriation**
The water right holder shall file the notice of Proof of Appropriation of water (under which the certificate of water right is issued) when the permanent distribution system has been constructed and the quantity of water required by the project has been put to full beneficial use. The certificate will reflect the extent of the project perfected within the limitations of the water right. Elements of a proof inspection may include, as appropriate, the source(s), system instantaneous capacity, beneficial use(s), annual quantity, place of use, and satisfaction of provisions.

## FINDINGS OF FACT AND ORDER

Upon reviewing the investigator's report, I find all facts, relevant and material to the subject application, have been thoroughly investigated. Furthermore, I find the appropriation of water as recommended will not be detrimental to existing rights or to the public interest.

Therefore, I ORDER the approval of Application No. G1-28639 subject to existing rights and the provisions specified above.
You have a right to appeal this action to the Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of this document. The appeal process is governed by Chapter 43.21B RCW and Chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2).

To appeal, you must do the following within 30 days of the date of receipt of this document:

- File your appeal and a copy of this document with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.
- Serve a copy of your appeal and this document on Ecology in paper form - by mail or in person. (See addresses below.) Email is not accepted.

You must also comply with other applicable requirements in Chapter 43.21B RCW and Chapter 371-08 WAC.

| Street Addresses | Mailing Addresses |
|---|---|
| Department of Ecology<br>Attn: Appeals Processing Desk<br>300 Desmond Drive SE<br>Lacey, WA 98503<br><br>Pollution Control Hearings Board<br>1111 Israel Road SW Suite 301<br>Tumwater, WA 98501 | Department of Ecology<br>Attn: Appeals Processing Desk<br>PO Box 47608<br>Olympia, WA 98504-7608<br><br>Pollution Control Hearings Board<br>PO Box 40903<br>Olympia, WA 98504-0903 |

Please also send a copy of your appeal to:

Jacqueline Klug
Department of Ecology
Northwest Regional Office
3190 160th Avenue SE
Bellevue WA 98008

*For additional information visit the Environmental Hearings Office Website: http://www.eho.wa.gov . To find laws and agency rules visit the Washington State Legislature Website: http://www1.leg.wa.gov/CodeReviser .*

Signed at Bellevue, Washington, this _____ day of_____, 2011.

_____
Jacqueline Klug, Section Manager
Water Resources Program
Northwest Regional Office

## BACKGROUND

### Project Description

Island County Public Transportation Benefits Area (Island Transit) operates a transportation facility and administrative center located along State Highway 20 approximately 2 miles east of Coupeville, WA (see Attachment 1). The facility is undergoing an expansion and, as part of the process, Island Transit proposes to switch its water supply source from a small, neighboring community water system to a new well operated independently under a new water right. Water will be used for industrial, domestic and irrigation purposes.

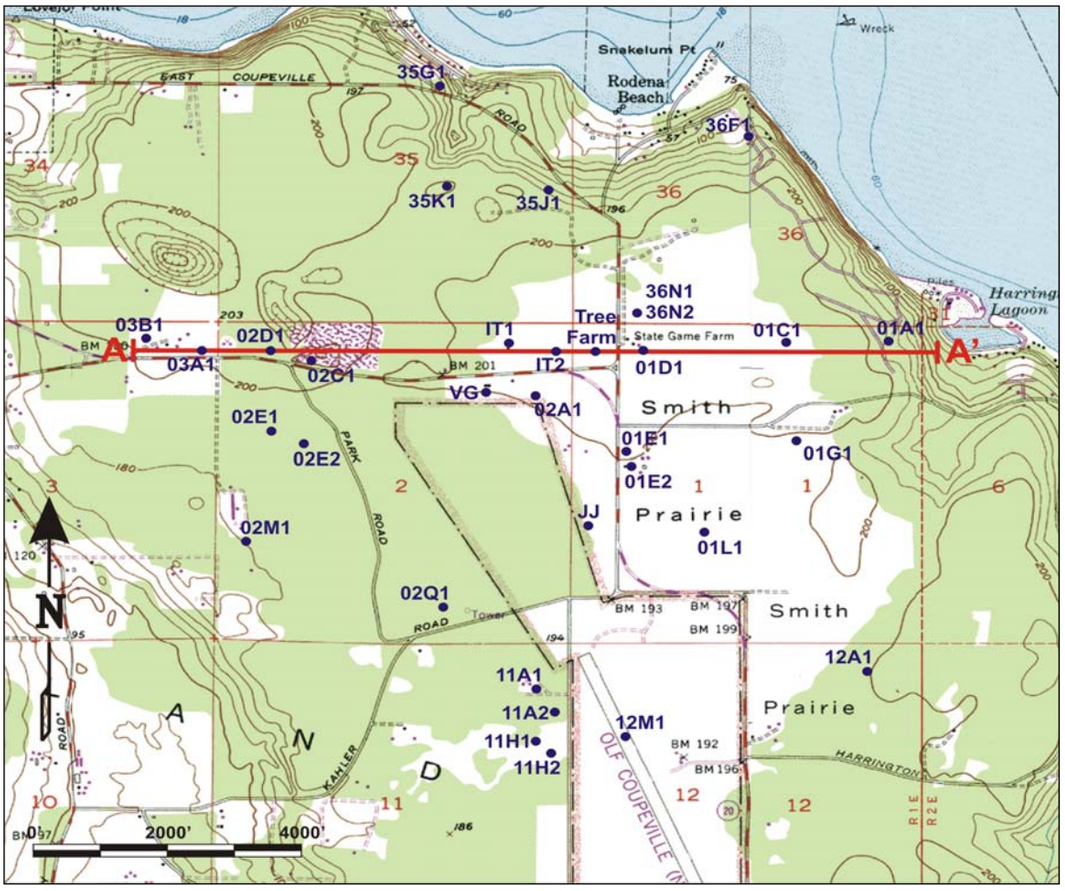


**Figure 1: Vicinity, cross section and well location map. Applicant's well is labeled "IT2"**

**Table 1:** Summary of Application No. G1-28639

| *Attributes* | *Proposed* |
|---|---|
| Applicant | Island County Public Transportation Benefits Area, dba Island Transit |
| Date of Application | October 12, 2009 |
| Instantaneous Quantity | 50 |
| Annual Quantity | 8.92 |
| Source | Groundwater |
| Point of Diversion/Withdrawal | Well |
| Purpose of Use | Industrial, domestic use and irrigation. |
| Period of Use | Industrial and domestic use, year-round<br>Irrigation use, seasonally from April 1 to October 15 |
| Place of Use | See Attachment 1 for map location |

**Legal Requirements for Application Processing**

The following requirements must be met prior to processing a water right application:

- **Public Notice**
  Public Notice was published in *The Whidbey Examiner* on May 19 and 26, 2010.
  One protest was filed with Ecology by Ms. E.L. Harvey of Coupeville, WA. The protest was timely and is discussed in detail below.
- **State Environmental Policy Act (SEPA)**
  Exempt under SEPA WAC 197-11-305 and WAC 197-11-800(4) because the instantaneous quantity is less than the one cubic foot per second threshold.

**INVESTIGATION**

**Site Visit**

A site visit was conducted on January 13, 2011, by Robinson Noble Senior Hydrogeologist Doug Dow, LHG to inspect the existing facility and collect information on the planned expansion. We met with Ms. Martha Rose, Executive Director of Island Transit. We were able to inspect all of the pertinent potions of the water system currently in place, including both the existing well and the new well that is the subject of this examination. The current system is a community well shared among three neighboring properties, including the current Island Transit facility. If their application is approved, Island Transit reported that they intend to disconnect from this existing system in favor of use of the new well.

**Existing Water Rights**

Island Transit holds no other water rights in the vicinity of this property. Nine groundwater certificates and two groundwater permits have been authorized within the same section for various domestic and irrigation needs. Eighteen more certificates and permits exist in the surrounding sections (a Report of Exam (ROE) to approve permit G1-28613 was processed immediately prior to this ROE as part of the same processing contract with Ecology). Together these 30 certificates/permits account for a total annual allocation of 1229.66 acre-feet. A total of 50 claims are also recorded in section 2 and its eight surrounding sections. As these are unadjudicated, the allocations they may represent cannot be determined.

**Hydrologic/Hydrogeologic Evaluation**

The point of withdrawal and place of use are in the Smith Prairie area of central Whidbey Island. The hydrogeologic setting in the Smith Prairie area is described in Water Supply Bulletin No. 25 as a remnant of a glacial outwash terrace formed during the recession of Vashon ice (Anderson, 1968). No drainage network has developed on the prairie surface, and there are no lakes. It covers about eight square miles and lies between 180 and 200 feet above sea level. The USGS report, *Estimating Ground-Water Recharge from Precipitation on Whidbey and Camano Islands, for Water Years 1998 and* 1999, (Sumioka and Bauer, 2003) states that the Smith Prairie area receives an average precipitation of less than 23 inches per year. They estimate that the central part of the prairie receives 8 to 12 inches of annual recharge with 4 to 8 inches of recharge in the surrounding margins. The *Island County Water Resource Management Plan* adopted in 2005 considers Smith Prairie to be a Critical Aquifer Recharge Area. The EPA designated Whidbey Island's aquifers as "Sole Source Aquifers" in 1982 (Island County, 2005).

The Island Transit well is located in sub-basin 13, as described in the County's management plan (Figure 2). However, the Smith Prairie area also includes parts of sub-basins 14, 29, and 30. The sub-basin designation was determined from estimated ground water divides as derived from modeled aquifer water level elevations. Since the central portion of Smith Prairie receives recharge at a rate of up to 50 percent of estimated annual precipitation, ground water will tend to mound up in this area and flow away from the high point in all directions. This general pattern is reflected in the management plan modeled water levels. The management plan also assumes that groundwater withdrawals within a sub-basin would have "little, if any effect" on wells in the adjacent sub-basins (Island County, 2005). However, as presented in the management plan, the "mound" of water is centered on the intersection of three of the four sub-basins. Therefore, a withdrawal affecting water levels at the center of the mound will lower the top of the mound, and therefore, the effects will propagate across the sub-basin boundaries. While in this case the scale of the withdrawal requested by Island Transit is too small to have a meaningful effect on overall water levels in the aquifer system, it is probably untrue to suggest that, regionally, the sub-basins do not have effects on each other.

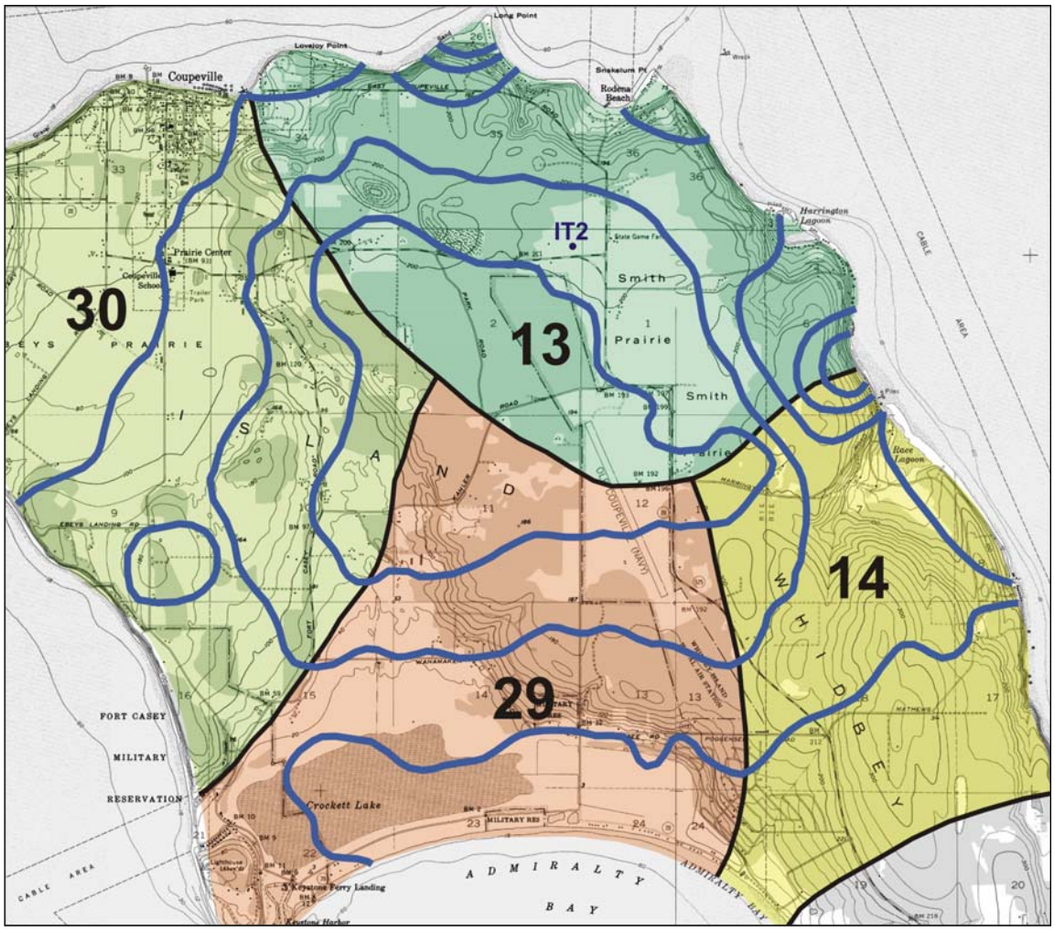


**Figure 2: Island County-designated sub-basins in the area of Smith Prairie. (Figure re-drawn from Island County, 2005.) Blue lines are County-modeled "Generalized ground water contours" (unlabeled in the original). Applicant's well is labeled "IT2."**

Well logs were obtained from the Department of Ecology's data base and the Island County Hydrogeologic Database to create the hydrogeologic cross sections shown on Figure 3. Island County aquifers and aquitards are described in the USGS report, *Ground-water Resources and Simulation of Flow in Aquifers Containing Freshwater and Seawater* (Sapik and others, 1988). Five aquifers were identified and designated A through E for oldest to youngest (deep to shallow) respectively. Aquifers A, B, and C are located below sea level and aquifers D and E above sea level.

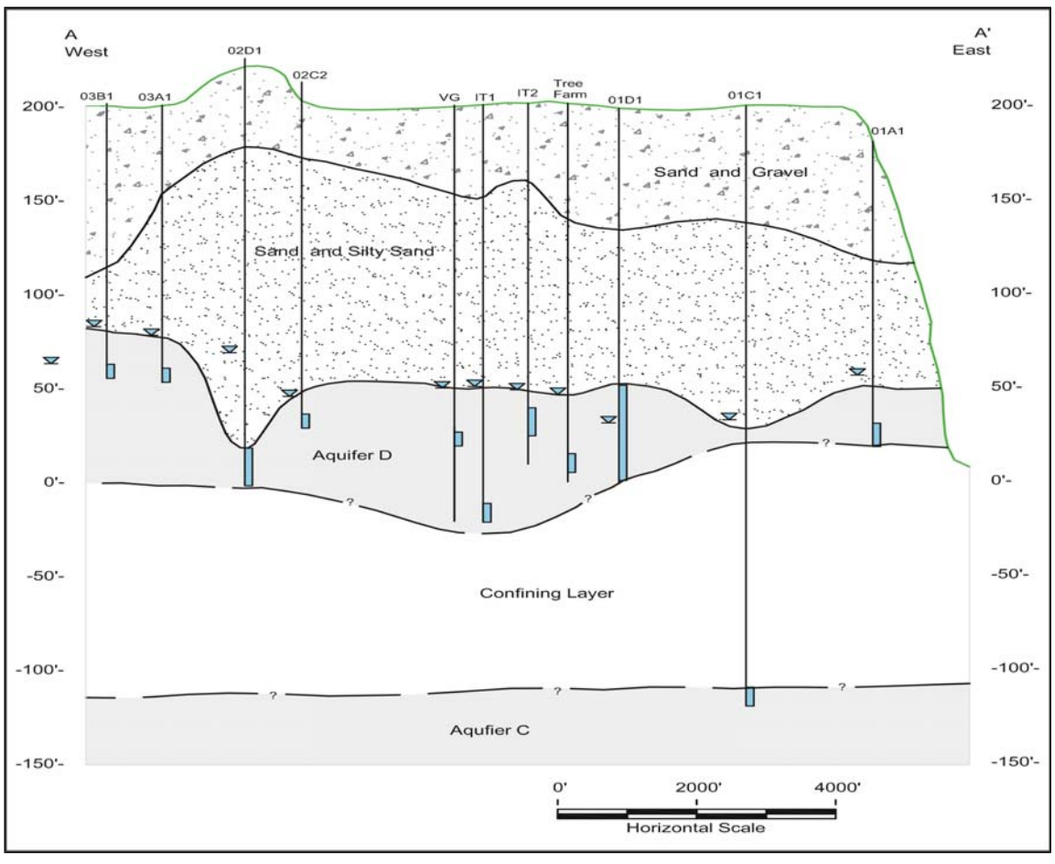


**Figure 3: Hydrogeologic cross section A - A' (see Figure 1 for location).**

The general geology of the area, as determined from the well logs and shown on the cross section, is characterized by a section of gravel and sand that may locally be over 100 feet in thickness. Within this zone, well logs occasionally indicate layer(s) of "hardpan" which possibly indicates glacial till deposits. Below the gravel and sand is a thick sand layer that can be over 100 feet thick and contains silty sand and clay layers. This layer provides partial confinement to the underlying aquifer D. Aquifer D is locally ten to over 30 feet thick and is predominately sand with minor gravel layers. It has been tested to provide between ten and 300 gallons per minute (gpm) to wells completed in the Smith Prairie. Aquifer E does not appear to be present in the area and the majority of sediments above aquifer D are unsaturated.

In sub-basin 13, the general groundwater flow direction ranges from northward to eastward. This same direction is also implied by the County management plan modeled water level patterns (Figure 2). The aquifer water levels show that the aquifer C gradient is similar to that in aquifer D. For this sub-basin, both aquifers ultimately discharge to Saratoga Passage.

A blue-gray clay aquitard separates aquifer D from aquifer C. It is found from just above sea level to more than 100 feet below sea level. Aquifer C typically composed of and is composed of sand and gravel, is influenced by tidal changes, and can be subject to sea water intrusion. Wells completed in aquifer C have also been tested at rates up to and exceeding 300 gpm.

The Island Transit Well log shows sand and gravel deposits in varying proportions throughout the full 190 feet of drilled sequence. Saturated deposits of primarily sand were encountered at 150 feet. The well is screened from 160 to 175 feet below ground.

After construction was complete, the Island Transit Well was test pumped at an average rate of approximately 46 gpm for 24 hours. Based on the test results, PGG recommended a production rate of 40 gpm for long-term use, but acknowledged that a higher rate of production may be possible to serve peak needs (PGG, 2009). From the available test data, it does not appear that the well is capable of sustaining an instantaneous rate of 50 gpm for more than a few days of continuous pumping. However, given the transient nature of the Island Transit employees using the facility, such a high peak demand will likely be intermittent.

**Water Availability**

There are no regulatory closures or restrictions affecting water availability on Whidbey Island, therefore I find water is legally available for this appropriation. The instantaneous quantity of 50 gpm is physically available for appropriation (see discussion below in Impairment Considerations).

Island Transit report that for the new facility there will be approximately 151,067 $ft^2$ of open space (with trees and other vegetation), approximately 49,681 $ft^2$ of pervious area (trees, parking area rain gardens/planters and perimeter landscaping), and approximately 8,000 $ft^2$ of vegetation around the Administration building. This totals 208,748 $ft^2$ or 4.79 acres of landscaped area. Current landscaping plans indicate that the open spaces and areas under trees will be planted with seed mixes including wildflower and native seed. According to Island Transit, these seed mixes are considered drought tolerant and will require no supplemental irrigation after establishment.

The annual quantity of water for appropriation was calculated using Crop Irrigation Requirement (CIR) data from the State of Washington Irrigation Guide (WAIG) 1985 and 1992. The WAIG does not have a specific listing for landscaping but the Irrigation Water Management Society (http://www.iwms.org/seattle_area.asp) estimates that the amount of water needed for landscape plant irrigation is approximately 70% of that required for turf. The WAIG lists a CIR of 17.77 inches of water for pasture/turf at Coupeville (WAIG, Appendix B, p 2).

However the CIR formula does not take into account the loss in conveyance from seepage, evaporation and surface runoff. Consequently, irrigation efficiency percentages were used from Ecology Water Resources Guidance 1210. In-ground sprinkler systems, such as the one planned for this property, are assumed to have an average efficiency of 75%. Adjusting the CIR by the efficiency, the Total Irrigation Requirement (TIR) for the 4.79 acres of landscaping was calculated, as shown below:

TIR = acres x CIR x ADJ% / EFF%

Where:

TIR = total irrigation requirement (acre-feet per year)
Acres = irrigated crop area (acres)
CIR = crop irrigation requirement (feet of water)
ADJ% = adjustment to account for landscaping water needs vs. turf
EFF% = irrigation system application efficiency

The CIR for turf/pasture is 1.48 feet (17.77 inches).

So, the TIR for 4.79 acres of landscaping, all watered using a in-ground sprinkler irrigation system, is:

TIR = (4.79 acres of turf x CIR of 1.59 x 70% adjustment / 75% efficiency)

(2 x 1.48 x 0.7 / 0.75) = 6.62 acre-feet

TIR = 6.62 acre-feet

Partial water system plan documentation provided by Island Transit reports an average day demand (ADD) for 110 employees of 2,375 gpd, including various industrial uses. This value was initially assumed to be reached by 2015, but Island Transit now believes that this is more likely a 20-year planning level.

Limited historical records provided for 2008 show daily uses up to around 2,200 gpd. Subtracting the water used for industrial purposes, the ADD for the planned personnel is about 1,650 gpd. On an annual basis, this equals 1.85 acre-feet.

Island Transit reports that it has begun using a wash-water recycling system to accomplish the bus washing and that this system will remain in place for the new facility. Based on informal estimates from Island Transit staff of recent water use, I estimate that the wash-water reclamation has reduced water used to around 300 gpd (0.33 afy). Industrial uses, beyond the bus washing, total about 100 gpd (0.11 afy). A limited amount of consumptive water use for the bus washing system seems likely on a periodic basis. Therefore, I have assigned a final total of 0.45 afy for the industrial use.

Together, the potable domestic and industrial uses total 2.3 afy and the full allocation will be 8.92 afy.

**Impairment Considerations**

Water level measurements were collected in the neighboring “Tree Farm” well. According to PGG (2009), no drawdown resulting from pumping of the Island Transit well was observed at this observation well.

As noted above, the Island Transit well is located near the center of sub-basin 13 (Figure 2). The sub-basin is roughly 6.5 square miles in area and drains “radially” from a high point in the center of the island (along the southwest boundary of the sub-basin) north and east towards Penn Cove and Saratoga Passage. No notable surface water features are present on the upland of the sub-basin. Given the low elevation of the water levels in aquifer D, and the general absence of saturated sediments above it, it is probable that most spring outfalls from aquifer D occur at or near beach-level along Penn Cove or Saratoga Passage. Seeps may occur higher on the coastal bluffs, but are likely seasonal in nature, with recharge source areas that are close to the bluff edges.

The USGS identified three zones of recharge values of between 2 and 12 inches within the groundwater sub-basin. Using the median values for each of the three ranges reported, we calculated a weighted value for the sub-basin of 7 inches of recharge. Over the full area of the sub-basin, this amounts to over 169,000 acre-feet per year of water entering the shallow aquifer system (aquifer D).

To assess the current demand on the aquifer systems, we used Ecology’s WRATS database to determine the number of claims and water right permits and certificate located in sub-basin 13. We then used the Ecology water well log database to count the number of recorded water wells in the same area. Recognizing that neither database is necessarily a complete record for the possible water users in the area, we counted 54 claims, 31 permits/certificates[1], and 153 well logs. Using this as a starting point, we calculated the following:

1) All of the claims (54) plus the well logs (153) minus the permits/certificates (31) totals 177 withdrawals. Some of the claims may be double counted because they have a recorded well log, but this may be offset by unpermitted wells or water users.
2) To be conservative and over-estimate the possible water use from the system, we assigned a total of 5,000 gallons of use per day for each of the 177 withdrawals. This totals 885,000 gallons per day, which is 991.4 acre-feet per year (afy).
3) The 31 permits and certificates total up to 1,198 afy (assuming all of the rights are in full use each year, which is not likely).
4) The combined total withdrawals are 2,189.4 afy.

It is generally well understood that a large proportion of the recharge in a given system is not available for use due to timing, storage, or discharge pathways that cannot easily be tapped. Further, in an island setting such as this, excess withdrawals can lead to impacts such as saltwater intrusion. However, even assuming that only a small portion of the overall recharge is available for capture and use, the total calculated withdrawals in the sub-basin is still a small percentage of the available recharge (less than 2%).

[1] The count of claims and permits/certificates here differs slightly from the discussion in the “Existing Water Rights” section because the latter case included records in sub-basins 30 and 29.

Using the above to provide a sense of scale, we conclude that water is available for the proposed withdrawal. Further it does not appear likely that this use will impair other uses in the sub-basin both because of the small amount requested for allocation and the lack of measurable impacts in neighboring withdrawals (PGG, 2009).

Given the location of the proposed withdrawal is about 0.8 miles inland from the coast, saltwater intrusion at this location is not a concern. As part of the preliminary investigation for this application, PGG investigated the likelihood of saltwater intrusion that might result from the proposed withdrawal (PGG 2010) and determined that the risks of saltwater intrusion resulting from this application were low. I generally concur with PGG's conclusion. Additionally, as noted above, water appears to be available and the requested annual allocation is small, therefore, the withdrawal is unlikely to increase the risk of saltwater intrusion for users nearer to the coast.

**Public Interest Considerations**

The proposed use is considered beneficial. No impacts or public interest considerations were identified as a part of this examination.

**Consideration of Protests and Comments**

Ms. E.L. Harvey submitted a letter of protest to the Department of Ecology on June 3, 2010. The protest was considered timely and raised questions concerning water supply availability, water quality protection, and saltwater intrusion in the aquifer system.

While Ms. Harvey's protest did not specifically mention a concern over potential impacts to her water source, the issue is implied in her question about overall water availability in the aquifer. As noted above, PGG did not observe drawdown in the "Tree Farm" well as a result of pumping at the Island Transit well, approximately 400 feet away. Given the aquifer characteristics and my general understanding of the setting, I believe that use of the Island Transit well will not impair the use of the Ms. Harvey's well, located some 1,200 feet west of the Island Transit well. With regard to the aquifer water availability, my analysis, as presented above, indicates there is plenty of water available in the aquifer. Further, concerning water availability and water quality monitoring, it is my understanding that Island County Public Health Department has programs to monitor the health of the county's water resources, particularly saltwater intrusion. This appears to be bourn out by the Water Resources Management Plan (Island County, 2005). Based on copies of documentation provided by Ms. Harvey, the SEPA and site plan approval evaluation of the project completed by county planning, health and engineering departments identified no environmental concerns regarding water supply or saltwater intrusion.

Ms. Harvey states the area and aquifer is a "critical water area" and a "sole source aquifer." By "critical water area" I assume she is actually referring to the County designation of "critical recharge area." The designations of "sole-source aquifer" and a "critical recharge area" are regional-level designations adopted by Island County, the former via an EPA process, the other as a county land-use designation. Neither of these appears to limit further allocation of the resource for this sub-basin. Both designations are concerned with protection of aquifer water quality. Again, based on the County's management plan (2005) and my understanding of current county policies, it appears that the County will use these designations as part of their on-going management of resources.

**CONCLUSIONS**

- Water is available for appropriation.
- This requested allocation is for a beneficial use, and will not impair existing rights or be detrimental to the public welfare.
- No impacts to surface water were identified.
- No increase in the likelihood of saltwater intrusion is expected.

**RECOMMENDATIONS**

Based on the above investigation and conclusions, I recommend that the Application No. G1-28639 be authorized, in the amounts and within the limitations listed below and subject to the provisions beginning on Page 2.

**Purpose of Use and Authorized Quantities**

The amount of water recommended is a maximum limit and the water user may only use that amount of water within the specified limit that is reasonable and beneficial.

- 50 gallons per minute
- 8.92 acre-feet per year

**Point of Withdrawal**

NE¼, NE¼, Section 2, Township 31 North, Range 01 East W.M.

**Place of Use**

As described on Page 1 of this Report of Examination.

Report by: _____ _____

Burt G. Clothier, LGH, RG, CPG
Robinson Noble, Inc.

Date

_____

Licensed Hydrogeologist 140

Reviewed by: _____ _____

Jerry L. Lizak, LG, LHG
Ecology Water Resources Program

Date

_____

Licensed Geologist/Hydrogeologist 834

References and Selected Sources:


Pacific Groundwater Group, 2010, letter to Jerry Liszak at Washington Department of Ecology concerning "Phase 1 Review (Island Transit) Water Rights Processing G1-28639," dated August 2, 2010, 10p., 2 figures.

Pacific Groundwater Group, 2009, letter to Tom Whittaker at Waterleaf Architecture concerning "Island Transit Production Well," dated November 4, 2009, 5p., 5 figures, 1 appendix.

Irrigation Water Management Society (http://www.iwms.org/seattle_area.asp), accessed March 22, 2011.

Island County, 2005, *Island County Water Resource Management Plan – 2514 Watershed Planning:* Adopted by the Board of Island County Commissioners, June 20, 2005, 40 p., 12 appendices.

Sumioka, S.S. and H.H. Bauer, 2003, *Estimating ground-water recharge from precipitation on Whidbey and Camano Islands, Island County Washington, for water years 1998 and 1999:* U.S. Geological Survey Water Resources Investigations Report 03–4101, 33 p., 2 appendices.

United States Department of Agriculture, 1997, *Irrigation Guide, Part 652:* Natural Resources Conservation Service, National Engineering Handbook 820 p. 2 appendices.
Accessed at: http://www.wa.nrcs.usda.gov/technical/ENG/irrigation_guide/index.html on March 7, 2011.

Sapik D.B., G.C. Bortleson, B.W. Drost, M.A. Jones and E.A. Prych, 1988, *Ground-water resources and simulation of flow in aquifers containing freshwater and seawater, Island County Washington:* U.S. Geological Survey Water Resources Investigations Report 87–4182, 67 p., 4 plates.

Easterbrook, D.J., 1968, *Pleistocene stratigraphy of Island County*: State of Washington Department of Natural Resources Water Supply Bulletin 25, Part I, 35 p.

Anderson, H.W., 1968, *Ground-water resources of Island County*: State of Washington Department of Natural Resources Water Supply Bulletin 25, Part II, 318 p.


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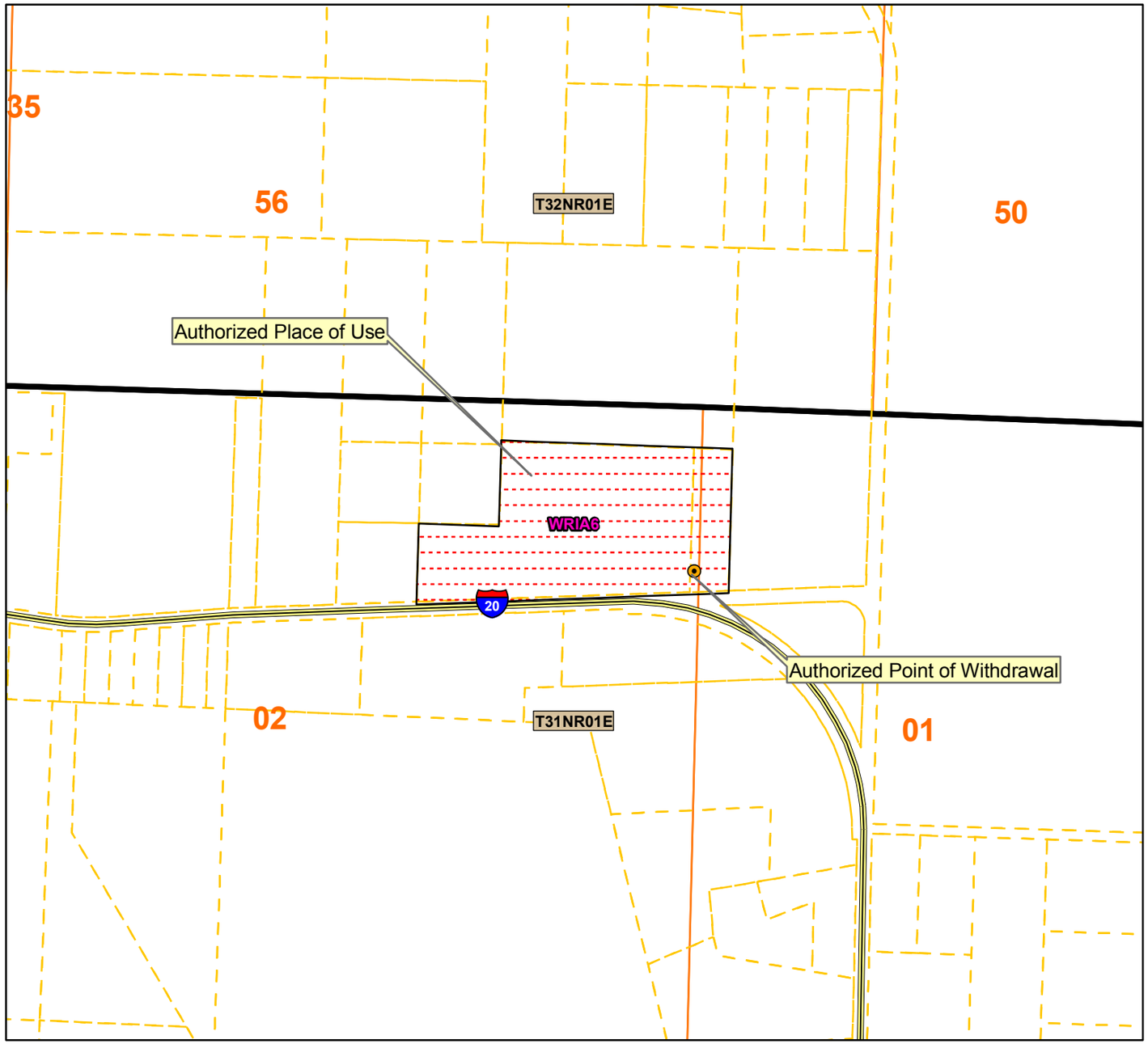
Island Cnty Public Transportation
Water Right Number G1-28639
Sec.02, T 31N, R 01E W.M.
WRIA 6 - Island County

DEPARTMENT OF ECOLOGY
State of Washington

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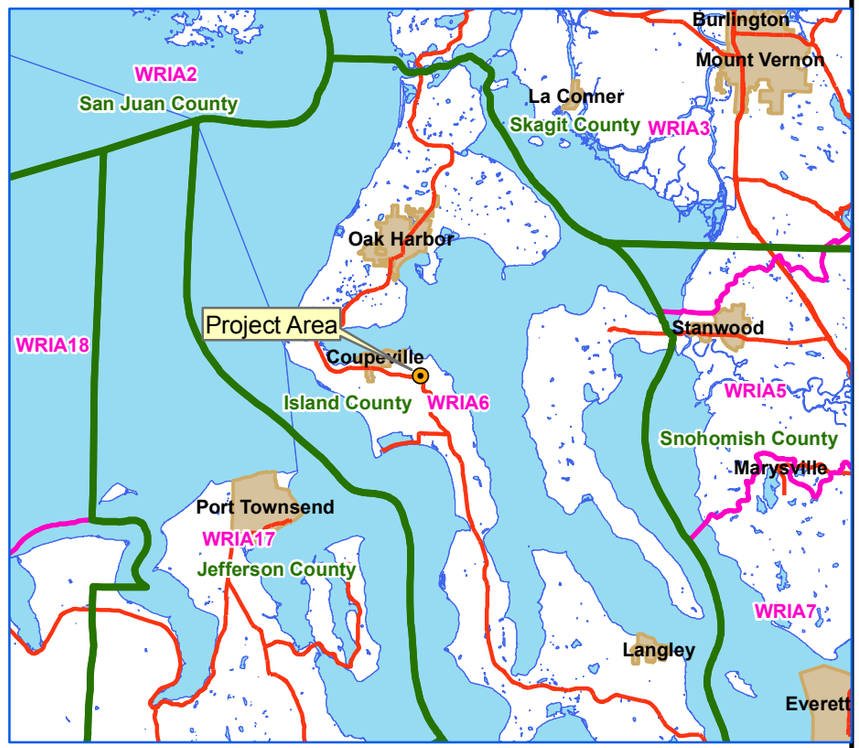


5 2.5 0 5 10
Miles

**Legend**

- County
- WRIA
- Highways
- Townships
- cities
- Sections
- Authorized Point of Withdrawal
- Authorized Place of Use

**Place of use and point(s) of diversion/withdrawal are as defined on the cover sheet under the headings, 'LOCATION OF DIVERSION/WITHDRAWAL' and 'LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED.'**

**Attachment 1**