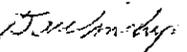


**AGENDA BILL  
Beaverton City Council  
Beaverton, Oregon**

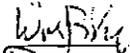
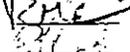
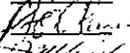
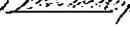
**SUBJECT:** Bid Award – Aquifer Storage and Recovery (ASR) No. 6 Production Well Drilling Project

**FOR AGENDA OF:** 2-17-15 **BILL NO:** 15043

**Mayor's Approval:** 

**DEPARTMENT OF ORIGIN:** PW 

**DATE SUBMITTED:** 2-4-15

**CLEARANCES:** City Attorney   
 CAO   
 Purchasing   
 Finance   
 Engineering 

**PROCEEDING:** CONSENT AGENDA  
(CONTRACT REVIEW BOARD)

- EXHIBITS:**
1. Bid Results Summary
  2. Agenda Bill 14178  
(w/Exhibits 1 & 2 only)
  3. Agenda Bill 14177  
(w/Exhibit 1 only)

**BUDGET IMPACT**

EXPENDITURE	AMOUNT	APPROPRIATION
REQUIRED \$829,659*	BUDGETED 0*	REQUIRED \$829,659

\* Account Number 505-75-3620-682 – Water Construction Fund – Extra Capacity System Projects – Construction Account.

**RECOMMENDED ACTION:**

City Council, acting as the Contract Review Board, authorizes the Mayor to sign a contract with Schneider Water Services, of St. Paul, Oregon for the Aquifer Storage and Recovery (ASR) Pump Station No. 6 Production Well Drilling Project (CIP 4021F) in a form approved by the City Attorney, and directs the Finance Director to include the additional \$829,659 in the Fiscal Year 2014-15 Supplemental Budget.

**HISTORICAL PERSPECTIVE:**

Since 1999, the City has used ASR as an alternative means to increase summer time drinking water supply and currently provides up to 5 million gallons per day (mgd). In 2014, the City's fall-to-spring daily drinking water demand was about 6.3 mgd by comparison. Beaverton's ASR technology plays a vital role in meeting peak (summer) season customer water demand, which topped out at 12.2 million gallons for the day on August 11, 2014, with a daily average of 9.8 mgd during the summer season. Drinking water from ASR wells represents up to 30 percent of daily water consumed in the summer period, and 5.3 percent of all water consumed in 2014 by Beaverton water customers. Beaverton's ASR program involves injecting treated drinking water from the Joint Water Commission (JWC) water treatment plant into natural underground basalt formations (aquifers), where it is stored for later use.

In September 9, 2014, City Council authorized test drilling of a 1,100-ft. deep well to prove feasibility as to whether a local aquifer within the Reserve at Cooper Mountain (RCM) subdivision is suitable for further development (Exhibit 2). Additionally, if it was determined that the local aquifer is suitable, City Council authorized the purchase of lots 39 and 40 in the RCM subdivision (Exhibit 3).

**Agenda Bill No:** 15043

**INFORMATION FOR CONSIDERATION:**

Hydrogeologic test results from the six inch test well indicate that a large-diameter ASR production well is feasible within the RCM. Based on this information, and successfully securing an amendment to homeowner association covenants, conditions and restrictions (CC&Rs) to allow siting of water facilities on the proposed lots, the City is completing the purchase of Lots 39 and 40 in the RCM so that a large-diameter ASR production well can be installed.

Drilling of the proposed 24-inch production well with a 20-inch diameter steel casing is estimated to take three months to complete. Because the RCM is still developing and is not fully built out, staff recommends drilling the production well as soon as possible to minimize the noise impacts to existing and future neighbors.

The invitation to bid was advertised in the Daily Journal of Commerce on December 3, 2014. Bids were opened at 2:00 P.M. on February 3, 2015, and the City received a single bid from Schneider Water Services of St. Paul, Oregon, for \$829,659.00 (Exhibit 2). Staff has reviewed the bid and recommends award to Schneider Water Services.

**CITY OF BEAVERTON  
 BID SUMMARY**

Project Name: Aquifer Storage & Recovery (ASR) No.6 Production Well Drilling Project #2951-15

TO: Mayor & City Council. SUBJECT: Bid Opening  
 FROM: Purchasing Division WITNESSED BY: David Winship

Bids were opened on February 3, 2015 at 2:00PM in the Willamette River Conference Room #442

VENDOR NAME CITY, STATE	Bid Proposal	Ack Addenda	Bid Bonds	Bidder Const. Schedule	Current Project Info	Bidders Responsibility Form	GRAND TOTAL
Schneider Water Services St. Paul, Oregon	X	X	X	X	X	X	\$ 829,659.00

The Purchasing process has been confirmed.

Signed: Larry L. Musick  
 Purchasing Division-Finance Dept.

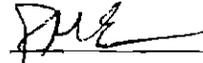
The above amounts have been checked: YES NO

Date: 2/3/2015

AGENDA BILL  
Beaverton City Council  
Beaverton, Oregon

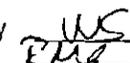
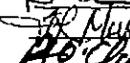
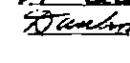
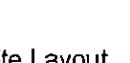
**SUBJECT:** Bid Award – Purchase of Real Property for the Aquifer Storage and Recovery (ASR) Pump Station No. 6 Project

**FOR AGENDA OF:** 9-09-14 **BILL NO:** 14178

**Mayor's Approval:** 

**DEPARTMENT OF ORIGIN:** PW 

**DATE SUBMITTED:** 8-26-14

**CLEARANCES:** City Attorney   
 CAO   
 Purchasing   
 Finance   
 Engineering 

**PROCEEDING:** CONSENT AGENDA  
(CONTRACT REVIEW BOARD)

- EXHIBITS:**
1. Reserve at Cooper Mountain Tax Lot Map
  2. Draft ASR No. 6 Site Layout
  3. Standard Real Estate Agreement

**BUDGET IMPACT**

EXPENDITURE	AMOUNT	APPROPRIATION
REQUIRED \$320,000*	BUDGETED 0**	REQUIRED \$320,000*

\* \$320,000 is the estimated expenditure amount for the purchase of land to develop future ASR No. 6 Pump Station.

\*\* Account Number 505-75-3620-652 – Water Construction Fund – Right of Way – Construction Account.

**RECOMMENDED ACTION:**

City Council, acting as the Contract Review Board, authorizes the Mayor to execute the purchase of real property for the Aquifer Storage and Recovery (ASR) Pump Station No. 6 Project (CIP 4021F) in a form approved by the City Attorney, and directs the Finance Director to include the additional \$320,000 in the FY 2014-15 November Supplemental Budget.

**HISTORICAL PERSPECTIVE:**

Since 1999, the City has used ASR as an alternative means to increase summer time drinking water supply by up to five million gallons each day (mgd). Currently, the City's winter time drinking water demand is about six mgd by comparison. Beaverton's ASR technology plays a vital role in meeting peak season water demand, which just topped out at 12.2 mgd for the day on August 11. Last summer, drinking water from ASR wells represented about 25 percent of the total volume of water consumed by Beaverton residents. Beaverton's ASR program involves injecting treated drinking water from the Joint Water Commission (JWC) water treatment plant into natural underground basalt formations (aquifers), where it is stored for later use.

The JWC completed an extensive ASR program study in 2011, which includes a long term master plan, and test drilling results. Subsequently, the State of Oregon issued a Limited License to the JWC. Beaverton has a one-third share of the JWC ASR limited license allowing for up to 600 million gallons of water storage in the Cooper Mountain underground aquifer in the future. The JWC ASR study identified four potential ASR sites within the Reserve at Cooper Mountain (RCM) subdivision as a likely location of a future ASR facility. The RCM is a newer subdivision located at the top of Nora Road at its westerly

Agenda Bill No: 14178

terminus at about elevation 500. The subdivision is wholly owned by Pahlisch Homes and is being quickly built out. City staff have designated the potential ASR site in this area as ASR No. 6 for Beaverton's program.

**INFORMATION FOR CONSIDERATION:**

In March 2014, a study was completed by the City's hydrogeological consultant of record, GSI Water Solutions, Inc., (teamed with an engineering consultant), which further identified specific lots within the RCM subdivision for possible development of ASR No. 6. Based on the comprehensive work completed for this ASR assessment, a development plan is recommended to:

- Perform test well drilling in the vicinity to determine the feasibility of ASR, which would include installation of a monitoring well in order to collect hydrogeologic data to help guide the next ASR development (the subject of a separate agenda bill).
- Purchase land at the RCM.
- Assuming monitoring well data and hydrogeologic response data are positive, develop a large-diameter ASR production well and pumping station.

Lots 39 and 40 from the RCM (Exhibit 1) have been identified as key lots located in the subdivision and a further feasibility study has supported that the location is well-suited for a future ASR well and pumping station, should successful test drilling prove that the hydrogeology of the site has the characteristics and capacity to host a large-diameter production ASR well. A couple of primary considerations when siting ASR locations are:

- Proximity of existing infrastructure needed to inject water into the potential aquifer, and
- Ability to dispose of turbid water generated during pump to waste operations.

In this case, Lots 39 and 40 are both ideally located directly adjacent to a large water transmission main and a City owned stormwater detention pond. The feasibility study determined that two lots are necessary to provide adequate construction access and provide the flexibility needed to design the house exterior to blend in with the neighborhood (Exhibit 2). For perspective, the City's ASR No. 4 pump station was built on two lots for the same reasons.

Considering the fast pace of development in the RCM subdivision (Lot 38 is already being developed), City staff have been negotiating with Pahlisch Homes to purchase Lots 39 and 40. The sale price for Lot 39 is \$170,000 and the sale price for Lot 40 is \$150,000. Under the terms of the standard sales agreement (Exhibit 3), the City would pay monthly non-refundable deposits of \$5000 for each lot for the months of August through December (the estimated time period needed to drill a test well and prove feasibility). These deposits would apply toward the sale price for each lot, and the closing date for sale of both lots is December 31, 2014.

City staff are in the process of notifying local residents in the vicinity of the proposed test well drilling activity and scheduling an Open House for the project in advance of the proposed drilling activity. Test well drilling (on SW 166<sup>th</sup> Avenue) is estimated to take approximately two months to complete, while full well development drilling on Lot 39 is expected to take three months to complete. Because the RCM is still developing and is not fully built out, staff recommends executing the purchasing agreements with the goal of drilling and developing a well on Lot 39 as soon as possible to minimize the noise impact to existing neighbors.

Following is a draft funding plan with future phases:

**FY 2014-15 Current Phase**

<u>Task</u>	<u>Cost</u>	<u>Funding/Account</u>
Test Well on SW 166 <sup>th</sup> Ave	\$200,000	505-75-3620-682
ROW/Purchase Lot.39,40	320,000	505-75-3620-652
Consultant Support	110,000	501-75-3701-683
Final Well Development (Lot 39)	730,000	505-75-3620-682
<b>Total</b>	<b>\$1,360,000</b>	

**Future Phases (Time Line Not Established)**

<u>Task</u>	<u>Cost</u>	<u>Funding/Account</u>
Final Design/Const. Documents	\$600,000	505-75-3620-682
Construction of Well House	1,500,000	505-75-3620-652
<b>Total</b>	<b>\$2,100,000</b>	



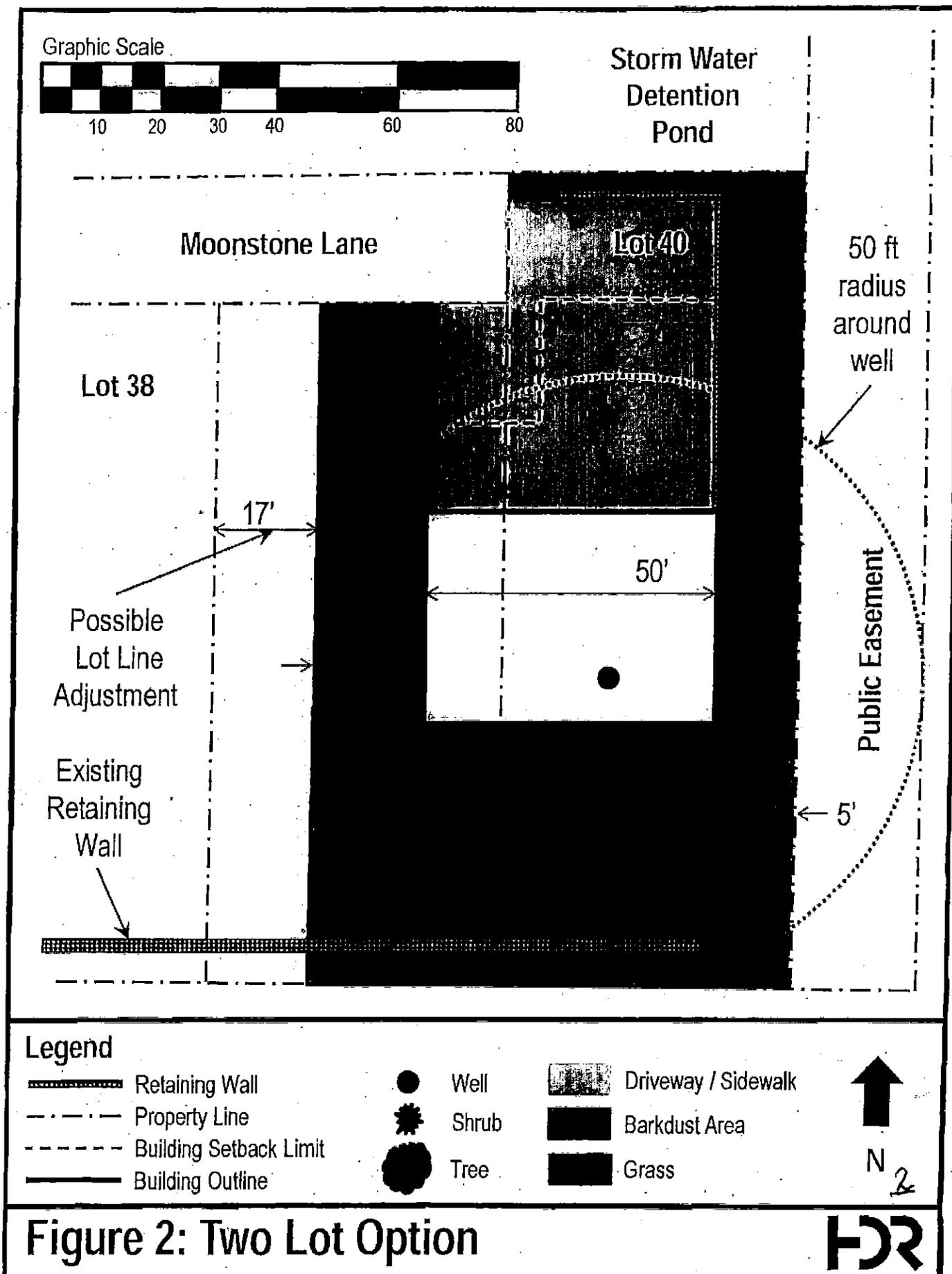


Figure 2: Two Lot Option



**AGENDA BILL**  
**Beaverton City Council**  
**Beaverton, Oregon**

**SUBJECT:** Bid Award – Aquifer Storage and Recovery (ASR) Pump Station No. 6 Test Well Drilling Project

**FOR AGENDA OF:** 9-09-14 **BILL NO:** 14177

**Mayor's Approval:** \_\_\_\_\_

**DEPARTMENT OF ORIGIN:** PW

**DATE SUBMITTED:** 8-26-14

**CLEARANCES:** City Attorney *US*  
 CAO \_\_\_\_\_  
 Purchasing *J. M. ...*  
 Finance *Ho ...*  
 Engineering *Ben ...*

**PROCEEDING:** CONSENT AGENDA  
 (CONTRACT REVIEW BOARD)

- EXHIBITS:**
1. Proposed Test Well Location
  2. Bid Results Summary Memorandum (Pending)

**BUDGET IMPACT**

EXPENDITURE	AMOUNT	APPROPRIATION
REQUIRED \$200,000*	BUDGETED 0**	REQUIRED \$200,000*

\* \$200,000 is the estimated construction cost and a bid summary/recommendation memo will be distributed to Council at the meeting as further explained in this agenda bill.

\*\* Account Number 505-75-3620-682 – Water Construction Fund – Extra Capacity System Projects – Construction Account.

**RECOMMENDED ACTION:**

City Council, acting as the Contract Review Board, authorizes the Mayor to sign a contract to the lowest responsible bidder for the Aquifer Storage and Recovery (ASR) Pump Station No. 6 Test Well Drilling Project (CIP 4021F) in a form approved by the City Attorney, and directs the Finance Director to include the additional \$200,000 in the Fiscal Year 2014-15 November Supplemental Budget.

**HISTORICAL PERSPECTIVE:**

Since 1999, the City has used ASR as an alternative means to increase summer time drinking water supply by up to five million gallons each day (mgd). Currently, the City's winter time drinking water demand is about six mgd by comparison. Beaverton's ASR technology plays a vital role in meeting peak season water demand, which just topped out at 12.2 mgd for the day on August 11. Last summer, drinking water from ASR wells represented about 25 percent of the total volume of water consumed by Beaverton residents. Beaverton's ASR program involves injecting treated drinking water from the Joint Water Commission (JWC) water treatment plant into natural underground basalt formations (aquifers), where it is stored for later use.

The JWC completed an extensive ASR program study in 2011, which includes a long term master plan, and test drilling results. Subsequently, the State of Oregon issued a Limited License to the JWC. Beaverton has a one-third share of the JWC ASR limited license allowing for up to 600 million gallons of water storage in the Cooper Mountain underground aquifer in the future. The JWC ASR study identified four potential ASR sites within the Reserve at Cooper Mountain (RCM) subdivision as a likely location of a future ASR facility. The RCM is a newer subdivision located at the top of Nora Road at its westerly end

at about elevation 500. The subdivision is wholly owned by Pahlisch Homes and is being quickly built out. City staff have designated the potential ASR site in this area as ASR-No. 6 for Beaverton's program.

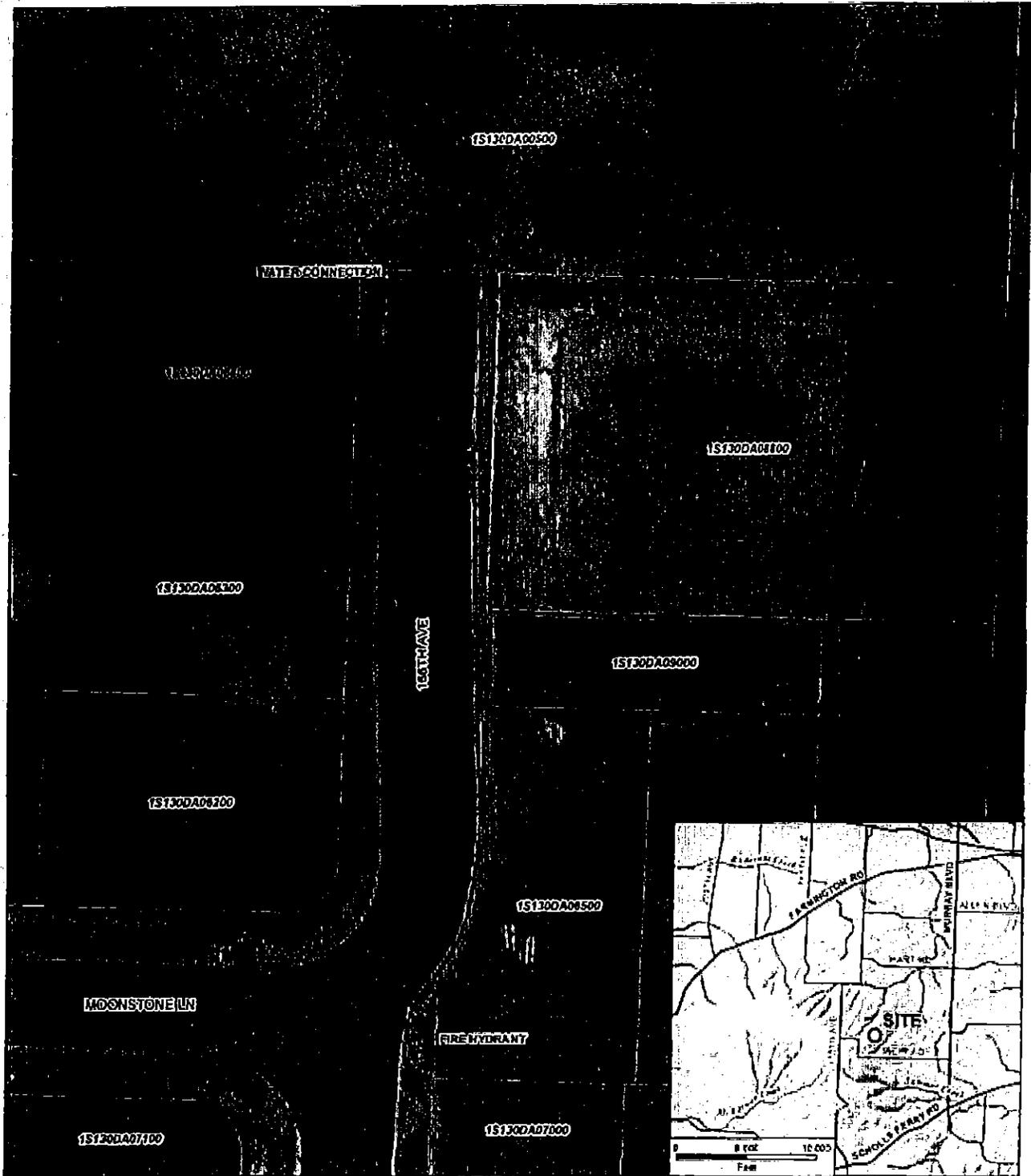
**INFORMATION FOR CONSIDERATION:**

In March 2014, a study was completed by the City's hydrogeological consultant of record, GSI Water Solutions, Inc., (teamed with an engineering consultant), which further identified specific lots within the RCM subdivision for possible development of ASR No. 6. Based on the comprehensive work completed for this ASR assessment, a development plan is recommended to:

- Perform test well drilling in the vicinity to determine the feasibility of ASR, which would include installation of a monitoring well in order to collect hydrogeologic data to help guide the next ASR development.
- Purchase land at the RCM (the subject of a separate agenda bill).
- Assuming monitoring well data and hydrogeologic response data are positive, develop a large-diameter ASR production well and pumping station.

Two lots have been located in the subdivision and a further feasibility study has supported that the location is well-suited for a future ASR well and pumping station, should successful test drilling prove that the hydrogeology of the site has the characteristics and capacity to host a large-diameter production ASR well. Based on feedback from GSI Water Solutions, Inc., the City recommends drilling a test well in the public right of way on SW 166<sup>th</sup> Avenue (Exhibit 1) to assess whether the local aquifer is suitable for further development. City staff are in the process of notifying local residents in the vicinity of the proposed test well drilling activity and scheduling an open house for the project in advance of the proposed drilling activity. Test well drilling is estimated to take two months to complete. Because the RCM is still developing and is not fully built out, staff recommends drilling the test well as soon as possible to minimize the noise impact to existing neighbors.

The invitation to bid was advertised in the Daily Journal of Commerce on August 25, 2014. Submitted bids are scheduled to be opened at 2:00 P.M. on September 9, 2014. Since the Council packet for this meeting will have already been distributed, staff will prepare and distribute a memo to City Council (at the start of the meeting) summarizing the bid results and recommending award to the lowest responsible bidder.



- LEGEND**
- Approximate Area for Proposed Piezometer
  - Fire Hydrant
  - Water Connection
  - Tax Lot

**FIGURE 1**  
**Proposed Piezometer Location**  
 City of Beaverton, Oregon

**MAP NOTES:**  
 Date: August 4, 2014  
 Date Reviewed: 08/11/14

