HIGH SYSTEM RESERVOIR

SEPTEMBER 2020
PROJECT OBJECTIVES

A NEW RESERVOIR IS NEEDED IN THE HIGH SYSTEM PRESSURE ZONE:

• TO INCREASE SYSTEM RELIABILITY – FIRE FLOW & PEAK DEMAND SUPPLY DURING THE SUMMER

• TO MEET WASHINGTON STATE DEPARTMENT OF HEALTH REQUIREMENTS (WSP)

• AFFECTS ALL CITY WATER CUSTOMERS SOUTH OF 14TH AVE.
CURRENT RESERVOIRS IN THE HIGH SYSTEM PRESSURE ZONE

33rd & Lamonte near Sacajawea

Garden Park at 37th Avenue near Stone Street
WATER SYSTEM BASICS

Water is pumped to successively higher reservoirs:
- Downtown
- Lower South Hill
- Mid South Hill
- Upper South Hill
- Lower Browne’s Mtn
- Upper Browne’s Mtn
LOCATION SELECTION CRITERIA

• VACANT LAND (MIN 1 AC, IDEALLY 2 AC) AND IDEALLY CITY OWNED

• CLOSE TO TRANSMISSION MAINS – WITHIN 5 OR 6 BLOCKS

• NEAR THE CENTER OF THE PRESSURE ZONE

• ELEVATION OF APPROX. 2380’ OR HIGHER TO KEEP RESERVOIR HEIGHT TO 100’ OR LESS

• RELATIVELY FLAT

• MAXIMIZE DISTANCE TO ADJACENT HOMES
LOCATION SELECTION

Near center of pressure zone
LOCATION SELECTION

Near center of pressure zone
Close to transmission main
LOCATION SELECTION

Near center of pressure zone
Close to transmission main
Above about 2380

Note: land slopes downhill north of 29th Ave and is therefore too low for a tank.
LOCATION SELECTION

- Near center of pressure zone
- Close to transmission main
- Above about 2380
- Meets all three criteria
LOCATION SELECTION

• Feasible area outlined green below
• Feasible tank site must be:
  • Vacant and at least 1-2 acres
  • Relatively flat
  • Ideally city owned
This is the feasible area circled green on the preceding exhibit.
Feasible site within this area needs to be:
• 1-2 acres
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• 1-2 acres
Criteria to evaluate
Close to existing t-main?
Nr center of pressure zone?
At or above 2380’?
Vacant land min 1 ac?
Relatively flat?
City owned?
Distant from nearby homes?
<table>
<thead>
<tr>
<th>Criteria</th>
<th>Met</th>
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<tbody>
<tr>
<td>Close to existing t-main</td>
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<tr>
<td>Nr center of pressure zone</td>
<td>yes</td>
</tr>
<tr>
<td>At or above 2380</td>
<td>yes</td>
</tr>
<tr>
<td>Vacant land min 1 ac</td>
<td>barely</td>
</tr>
<tr>
<td>Relatively flat</td>
<td>yes</td>
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<td>no</td>
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<td>Distant from nearby homes</td>
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</tr>
<tr>
<td>Other: tank would be large impact to this small area, no guarantee it could be acquired, very close to adjacent homes</td>
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Criteria                      Met
Close to existing t-main     yes
Nr center of pressure zone   yes
At or above 2380             yes
Vacant land min 1 ac         yes
Relatively flat              no
City owned                   no
Distant from nearby homes    no
Other: steeply sloped small property would result in high construction costs, substantial rock removal, this property likely is best used as commercial, no guarantee it could be acquired
Criteria Met
Close to existing t-main yes
Nr center of pressure zone yes
At or above 2380 yes
Vacant land min 1 ac barely
Relatively flat no
City owned yes
Distant from nearby homes no
Other: steeply sloped small parcel would result in high construction costs, substantial rock removal, most highly visible alternative, very close to adjacent homes
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<td>Other: due to small area, questionable</td>
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<tr>
<td>construction feasibility, very close to</td>
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<td>Other: school district not supportive of this idea</td>
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LOCATION SELECTION

ADDITIONAL SITES CONSIDERED OUTSIDE DESIRED AREA

**Ferris HS**
- Relatively flat
- Far from t-main – 3,500 add’l feet
- 30’ lower results in 130’ tank height
- Minimal available land, not city owned
- Not near center of zone
- Adds at least 50% to project cost
LOCATION SELECTION

ADDITIONAL SITES CONSIDERED OUTSIDE DESIRED AREA

Hazel’s Creek
- City owned, relatively flat, plenty of area
- Far from t-main – 4,000 add’l feet
- 50’ lower results in 150’ tank height
- Not near center of zone
- Adds at least 50% to project cost
LOCATION SELECTION

ADDITIONAL SITES CONSIDERED OUTSIDE DESIRED AREA

South Complex/KXLY
- City owned, relatively flat, plenty of area
- Far from t-main – 5,000 add’l feet
- 40’ lower results in 140’ tank height
- Not near center of zone
- Adds at least 50% to project cost
LOCATION SELECTION

ADDITIONAL SITES CONSIDERED OUTSIDE DESIRED AREA

Thornton Murhpy Park
- City owned, relatively flat, plenty of area, on t-main route
- 100' lower results in 200' tank height
- Not feasible
LOCATION SELECTION

ADDITIONAL SITES CONSIDERED
OUTSIDE DESIRED AREA

Lincoln Park
• City owned, relatively flat, plenty of area, roughly the same elevation as Hamblen Park
• Far from t-main – 4,000 add’l feet
• Adds at least 50% to project cost
Criteria | Met
--- | ---
Close to existing t-main | yes
Nr center of pressure zone | yes
At or above 2380 | yes
Vacant land min 1 ac | yes
Relatively flat | yes
City owned | yes
Distant from nearby homes | yes
Other: only site to meet all criteria |
RESERVOIR DIMENSIONS

- APPROX. 100’ TALL (AT HAMBLEN PARK – VARIES IN OTHER LOCATIONS)
- APPROX. 2 MILLION GALLON CAPACITY
- 50’-60’ DIAMETER AT ITS BASE (I.E., PEDESTAL DIAMETER)
- 100’ TANK DIAMETER (I.E., TOP DIAMETER)
AVAILABLE RESERVOIR TYPES

Hydropillar

Standpipe

Water spheroid
MITIGATION MEASURES IF TANK IS LOCATED IN HAMBLEN PARK

• START WITH HAMBLEN PARK, POSSIBLY INCLUDE OTHER PARKS

• THREE PARKS IN SOUTHGATE NEIGHBORHOOD – HAMBLEN, SOUTH COMPLEX, BEN BURR

• ACQUISITION OF CONSERVATION LAND
PROJECT SCHEDULE & NEXT STEPS

✓ PRESENT PROJECT TO SOUTHGATE AND LINCOLN HEIGHTS NEIGHBORHOOD MEETINGS

✓ HOLD COMMUNITY MEETING ADVERTISED TO ALL RESIDENTS WITHIN A SEVERAL BLOCK RADIUS (MID SEPTEMBER)
PROJECT SCHEDULE & NEXT STEPS

✓ PRESENT PROJECT TO SOUTHGATE AND LINCOLN HEIGHTS NEIGHBORHOOD MEETINGS

✓ HOLD COMMUNITY MEETING ADVERTISED TO ALL RESIDENTS WITHIN A SEVERAL BLOCK RADIUS (MID SEPTEMBER)

• EVALUATE & INCORPORATE COMMUNITY INPUT & SURVEY RESULTS (FALL 2020)

• SELECT TANK SITE AND BEGIN PERMITTING (WINTER 2020)
PROJECT SCHEDULE & NEXT STEPS

✓ PRESENT PROJECT TO SOUTHGATE AND LINCOLN HEIGHTS NEIGHBORHOOD MEETINGS
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• EVALUATE & INCORPORATE COMMUNITY INPUT & SURVEY RESULTS (FALL 2020)
• SELECT TANK SITE AND BEGIN PERMITTING (WINTER 2020)
• ANOTHER PUBLIC MEETING (ASSOCIATED WITH PERMITTING, WINTER 2020/21)
• INCORPORATE ADD’L COMMUNITY INPUT, FINALIZE PERMITTING (WINTER 2020/21)
PROJECT SCHEDULE & NEXT STEPS

✓ PRESENT PROJECT TO SOUTHGATE AND LINCOLN HEIGHTS NEIGHBORHOOD MEETINGS

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• ANOTHER PUBLIC MEETING (ASSOCIATED WITH PERMITTING, WINTER 2020/21)

• INCORPORATE ADD’L COMMUNITY INPUT, FINALIZE PERMITTING (WINTER 2020/21)

• PROJECT DESIGN (WINTER/Spring 2021)

• CONSTRUCTION (2021-2022)
CONCLUDING THOUGHTS

• THIS TANK IS AN IMPROVEMENT THE CITY HAS TO MAKE

• IF YOU LIVE ANYWHERE SOUTH OF 14TH AVE., YOU BENEFIT
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• IF YOU LIVE ANYWHERE SOUTH OF 14TH AVE., YOU BENEFIT

• EVERY LOCATION PRESENTED TONIGHT WILL BE CONTROVERSIAL

• THE RESERVOIR MUST BE LOCATED IN THE VICINITY OF HAMBLEN PARK AND SO WILL BE VISIBLE FROM THIS AREA REGARDLESS OF LOCATION
CONCLUDING THOUGHTS

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• HAMBLEN PARK MEETS ALL THE CRITERIA
• HAMBLEN DOESN’T DISPROPORTIONATELY IMPACT SOME NEIGHBORS BECAUSE IT’S A BLOCK AWAY FROM THE NEAREST HOME
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• THE COMPLETED TANK IMPACTS LESS THAN 1% OF THE AREA IN HAMBLEN PARK. THE PARK WILL NOT BE LOST OR DESTROYED AS SOME FEAR.

• A TANK IN HAMBLEN PARK IS AN OPPORTUNITY TO END UP WITH COMMUNITY ASSETS WHICH WOULD NOT BE REALIZED AT OTHER LOCATIONS
PROCEDURAL MATTERS

• THE PROJECT WEBPAGE IS YOUR SOURCE FOR UP TO DATE INFORMATION INCLUDING:
  • THIS PRESENTATION
  • THE SURVEY I REFERENCED
  • FAQS
  • STATUS UPDATES
PROCEDURAL MATTERS

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• BECAUSE OF THE IMPRACTICALITY OF PUBLIC QUESTIONS/COMMENTS WITH THIS MEETING FORMAT, YOU CAN SUBMIT COMMENTS AND QUESTIONS TO THE EMAIL ADDRESS ON THE WEB PAGE
QUESTION & COMMENTS

• COMMENT/QUESTION: THE PROPOSED TANK WILL SEVERELY IMPACT THE PARK. HOW MUCH OF THE PARK WILL BE IMPACTED?
QUESTION & COMMENTS

• **COMMENT/QUESTION:** THE PROPOSED TANK WILL SEVERELY IMPACT THE PARK. HOW MUCH OF THE PARK WILL BE IMPACTED?

• **RESPONSE:** AS WE’VE ATTEMPTED TO COMMUNICATE IN THIS PRESENTATION, WE DO NOT TAKE LOCATING THIS TANK IN THE PARK LIGHTLY. WE’VE COVERED TONIGHT THE 10 OTHER SITES CONSIDERED AND THE SUBSTANTIAL DISADVANTAGES OF EACH. RECALL THAT LESS <1% OF THE TOTAL PARK AREA WILL BE CONSUMED BY THE PROPOSED TANK.

THE TEMPORARY CONSTRUCTION IMPACT OF THIS TANK AFFECTS A LARGER AREA, APPROX. 1 ACRE OR 12% OF THE SITE. THAT IMPACTED AREA WILL BE REPLANTED AND RESTORED IMMEDIATELY FOLLOWING CONSTRUCTION.
QUESTION & COMMENTS

• COMMENT/QUESTION: IF THIS TANK DOES END UP BEING IN HAMBLEN PARK, PLEASE DON’T “IMPROVE” THIS PARK. WE LIKE IT JUST THE WAY IT IS.
QUESTION & COMMENTS

• COMMENT/QUESTION: IF THIS TANK DOES END UP BEING IN HAMBLEN PARK, PLEASE DON’T “IMPROVE” THIS PARK. WE LIKE IT JUST THE WAY IT IS.

• RESPONSE: WE HAVE RECEIVED THIS COMMENT FROM A NUMBER OF PEOPLE. WE HAVE ALSO RECEIVED THE OPPOSITE COMMENTS FROM A NUMBER OF PEOPLE. WE LOOK FORWARD TO REVIEWING THE SURVEY RESULTS TO SEE WHAT THE MAJORITY OF PEOPLE WAY ON THIS ISSUE.

THE CITIZENS WILL GUIDE OUR MITIGATION MEASURES. PARK IMPROVEMENTS DO NOT NECESSARILY MEAN DEVELOPING THE PARK.
QUESTION & COMMENTS

- COMMENT/QUESTION: IS “IMPACTS TO THE PUBLIC” ONE OF THE SITE SELECTION CRITERIA?
QUESTION & COMMENTS

• COMMENT/QUESTION: IS “IMPACTS TO THE PUBLIC” ONE OF THE SITE SELECTION CRITERIA?

• RESPONSE: YES, IT IS.

  • ONLY CONSIDERING VACANT PARCELS (AS OPPOSED TO BUYING HOMES AND DEMOLISHING HOUSES) IS ONE WAY TO REDUCE THE IMPACT TO PUBLIC.

  • FAVORING A RESERVOIR SITE WHICH IS AT LEAST 300’ FROM THE NEAREST ADJACENT HOME IS ANOTHER WAY TO REDUCE IMPACTS TO THE PUBLIC.

  • SELECTING A SITE WHICH REDUCES COSTS WE ALL HAVE TO PAY IS YET ANOTHER WAY TO REDUCE IMPACTS TO THE PUBLIC.

  • PLACING THE TANK CENTRALLY IN A TREED AREA ALSO REDUCES THE VISUAL IMPACT TO THE PUBLIC.
QUESTION & COMMENTS

• COMMENT/QUESTION: WAS THE POTENTIAL REDUCTION IN PROPERTY VALUES ONE OF THE CONSIDERATIONS FOR TANK SITE SELECTION?
QUESTION & COMMENTS

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• RESPONSE: ONE OF THE CRITERIA IS TO LOCATE THIS TANK AWAY FROM ADJACENT HOMES TO THE MAXIMUM EXTENT POSSIBLE TO REDUCE IMPACTS INCLUDING ANY POTENTIAL IMPACTS TO PROPERTY VALUES. HAMBLEN PARK IS THE LOCATION THAT PLACES THE PROPOSED TANK FURTHER FROM ADJACENT RESIDENTS THAN ANY OTHER ALTERNATIVE WHILE STILL ACCOUNTING FOR COST CONSIDERATIONS.
QUESTION & COMMENTS

• COMMENT/QUESTION: HAS AN ENVIRONMENTAL REVIEW BEEN PERFORMED YET? HAS A TREE PRESERVATION/REPLACEMENT PLAN BEEN DEVELOPED?
QUESTION & COMMENTS

• COMMENT/QUESTION: HAS AN ENVIRONMENTAL REVIEW BEEN PERFORMED YET? HAS A TREE PRESERVATION/REPLACEMENT PLAN BEEN DEVELOPED?

• RESPONSE: NO, THIS WILL OCCUR ONCE SITE SELECTION HAS BEEN FINALIZED.
QUESTION & COMMENTS

• COMMENT/QUESTION: HAVE YOU CONSIDERED VARIOUS COLOR SCHEMES OR A MURAL TO REDUCE VISUAL THE IMPACTS TO THIS TANK.
QUESTION & COMMENTS

• COMMENT/QUESTION: HAVE YOU CONSIDERED VARIOUS COLOR SCHEMES OR A MURAL TO REDUCE VISUAL THE IMPACTS TO THIS TANK.

• RESPONSE: THOSE EVALUATIONS WILL BE PERFORMED WITH COMMUNITY INPUT FOLLOWING FINALIZATION OF TANK SITE SELECTION. AS YOU SUGGEST, THERE ARE A NUMBER OF OPTIONS FOR REDUCING THE VISUAL IMPACTS.
QUESTION & COMMENTS

• COMMENT/QUESTION: WILL CELL PHONES ANTENNAE AND/OR AIRCRAFT WARNING LIGHTS BE INSTALLED ATOP THIS TANK.
QUESTION & COMMENTS

• **COMMENT/QUESTION:** WILL CELL PHONES ANTENNAE AND/OR AIRCRAFT WARNING LIGHTS BE INSTALLED ATOP THIS TANK.

• **RESPONSE:** YES, AIRCRAFT WARNING LIGHTS MUST BE INSTALLED. CELL PHONE ANTENNAE INSTALLATION WILL NOT BE A PART OF THIS PROJECT. CELL PHONE COMPANIES DESIRING TO PUT ANTENNAE ATOP THIS TANK WILL HAVE TO COMPLY WITH A SEPARATE PERMITTING PROCESS THAT IS NOT RELATED TO TANK CONSTRUCTION.