Agenda

RICHLAND PLANNING COMMISSION MEETING NO. 4-2014

Richland City Hall - 505 Swift Boulevard - Council Chamber

WEDNESDAY, April 23, 2014

7:00 p.m.

COMMISSION MEMBERS: James Utz, Chair; Carol Moser, Vice-Chair; Debbie Berkowitz; Marianne Boring; Clifford Clark; Stanley Jones; Kent Madsen; Amanda Wallner and James Wise

LIAISONS: Rick Simon, Planning and Development Services Manager
Phil Lemley, City Council

Regular Meeting, 7:00 p.m.

Welcome and Roll Call

Approval of the Agenda

Approval of March 26, 2014 Meeting Minutes

Public Comments

Public Hearing Explanation

New Business – Public Hearings

1. APPLICANT: HAYDEN HOMES (Z2013-106 & S2013-100)*

Request: **APPROVAL OF A REQUESTED CHANGE IN ZONING OF THE MAJORITY OF A 131.9 ACRE SITE, WHICH IS PRESENTLY ZONED AGRICULTURAL. A TOTAL OF 89.6 ACRES IS REQUESTED TO BE ZONED R-2S – MEDIUM DENSITY RESIDENTIAL. ANOTHER 17.6 ACRES IS PROPOSED FOR NOS – NATURAL OPEN SPACE ZONING. THE SITE IS ALSO PROPOSED TO BE DIVIDED THROUGH A PRELIMINARY PLAT KNOWN AS "CLEARWATER CREEK", CONSISTING OF 320 RESIDENTIAL LOTS, A 13.6 ACRE SCHOOL SITE, AND 11 OPEN SPACE TRACTS TOTALLING 32.09 ACRES.**

Location: **NORTH OF THE BURLINGTON NORTHERN RAILROAD; WEST OF STEPTOE STREET; SOUTH OF CLAYBELL PARK AND THE PLAT OF "THE HEIGHTS AT MEADOW SPRINGS" AND EAST OF THE AMON PRESERVE.**

Communications

Commission/Staff/Liaison Comments

Adjournment

***Quasi-judicial Hearing**

Planning Commission Workshop Meeting, Wednesday, May 14, 2014
Planning Commission Regular Meeting – Wednesday, May 28, 2014
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MINUTES
RICHLAND PLANNING COMMISSION MEETING No. 3-2014
Richland City Hall – 550 Swift Boulevard – Council Chamber
WEDNESDAY, March 26, 2014
7:00 PM

Call to Order:

Chairman Utz called the meeting to order at 7:00 PM

Attendance:

Present: Commissioners Berkowitz, Boring, Clark, Jones, Madsen, Wallner, Wise, Vice-Chair Moser and Chairman Utz. Also present were City Council Liaison Phil Lemley, Development Services Manager Rick Simon and Recorder Penny Howard.

Approval of Agenda:

Chairman Utz presented the March 26, 2014 meeting agenda for approval.

The agenda was approved as written.

Approval of Minutes

Chairman Utz presented the meeting minutes of the February 26, 2014 regular meeting for approval.

A motion was made by Commissioner Berkowitz and seconded by Commissioner Moser to approve the meeting minutes of the February 26, 2014 regular meeting as amended.

The motion carried, 9-0.

Public Comment

Chairman Utz asked for public comment on any item not on the agenda.

Joel Hopkins 2840 Jacob Court, Kennewick: Mr. Hopkins passed out letters to the Commissioners. "This is in regards to the sewer line that is being proposed to run down Reata Canyon. I'm the co-chair of Save Reata Canyon, so I got elected to do this. This (referring to letter) is from one of our members, but I think it does a good job of hitting all the important points. So, two minutes. This was never proposed when; this plan to run

the sewer line down Reata Canyon was never proposed during the original plan. This Badger Mountain South, the members of the county that lived there weren't given proper representation to speak our mind on the subject. When the notice did go out, it went out to several of the landowners only. Because this property is part of a homeowners association, it affects everybody in the area. So, even though what they were trying to do was run the sewer line through a access through the homeowners land, it actually impacts everybody in the community. So, that's one of the major parts to this; is that everybody in the community needs to have a chance to have a say in what's going to happen here. I can't speak for everyone in our area, but I can speak for everyone that I've talked to and there's no plus to running the sewer line down this canyon. It was never part of the original plan and we're opposed to it. And we hope that you guys can look at this and make a determination and try to steer the City Commission from running the sewer line down the canyon to start with."

Commissioner Moser asked if the City had been contacted and if there was an alternative route for the sewer line. **Mr. Hopkins** stated that there was a meeting held at Cottonwood Elementary School. Many emails had been sent to the City and although several other options were given, this route was never part of the original plan.

Commissioner Wise asked about the meeting and any resolutions. **Mr. Hopkins** informed all of a FAQ sheet available on the City of Richland website. No decision had been made to date, however, the proposed location of the sewer line was shown in Reata Canyon on the map provided by the City.

Commissioner Berkowitz asked if the answers provided during the meeting were satisfactory and if he has spoken to the developer directly. **Mr. Hopkins** stated that while their questions were answered, those answers created additional concern. **Commissioner Berkowitz** asked staff about the original plan for the sewer line. **Mr. Simon** explained that the plan prepared in the mid 2000's included several routes and that Public Works headed up the evaluation effort which would go before the City Council in the future. Residents should have an opportunity to address the issue at that time.
Commissioner Berkowitz supported with Mr. Hopkins' position and believed it to be a conflict with the sustainability of the Badger Mountain South community.

Loren Combs, Badger Mountain South developer, agreed with the residents that there was a better route for the sewer line. He stated that the Public Works Director was doing his due diligence in reviewing all of the available options, then would advise the City accordingly.

PUBLIC HEARING

Public Hearing Explanation: Ms. Howard explained the public hearing notice and appeal process and asked Commissioners to identify any conflicts of interest, ex-parte contact or any other appearance of fairness issues.

Unfinished Business

1. **APPLICANT: VSI DEVELOPMENT LLC (Z2014-100)**
   TEXT AMENDMENTS TO THE LAND USE & DEVELOPMENT REGULATIONS FOR THE BADGER MOUNTAIN SOUTH MASTER PLANNED COMMUNITY, GENERALLY LOCATED SOUTH OF BADGER MOUNTAIN, EAST OF DALLAS ROAD AND NORTH OF REATA ROAD

Mr. Simon presented the staff report for two amendments to the Land Use and Development Regulations for the Badger Mountain South Community. The first amendment would eliminate the 40% maximum garage requirement on the front building façade because it would limit many lots to a single car garage. The second amendment would provide for enclosed courtyards in the front yard area of duplex housing due to the narrow frontage and limited outdoor space.

Chairman Utz opened the Public Hearing at 7:27 PM.

Loren Combs, VSI Development LLC, 3600 Port of Tacoma Road: "We fully concur on the staff report. They did a much better job of drafting it up than I did my proposal.
I want to point out one change for you on page one of the proposed LUDR text amendments where we're talking about this limited opportunity for a three car garage. If you read, it's in LUDR Section 8.0, subsection 6.c. It currently says, for the change 'when otherwise permitted, attached garages with a front driveway condition may have three bays when one of the bays is recessed from the front façade at least 8 ft. and when a Porch Frontage Type is used with a porch at least 80 sq. ft. in size'. There's an error there and I can show you what is on this drawing (referring to projected images). This is that large porch that we're talking about here. That becomes the front façade of the building, because; so this then, the double car garage has to be set back at least four feet from that line. So, you're measuring from here. It goes back four feet. This third bay has to be eight more feet behind this line. So, if you read this the way it's written, this third bay only has to be eight feet from here and the measurement is supposed to be from this corner. So what we're proposing, if you look at that add on language it should say driveway condition may have three bays when one of the bays is recessed from the double garage façade, not from the front façade. So, it has to be pushed back even further. So, we are suggesting that language change. I did discuss it with Rick and point it out to him and the City, of course, is good with that because it even further deemphasizes that third car garage.

The other thing that we are asking, that's not in here and it's breaking news as of today, is – as you may recall, when this property was originally being considered to become part of the City's Urban Growth Area, the county had a requirement that any swimming pool, or habitable structure be at least 170 feet from the orchard. The City agreed to that and it was adopted into the City regulations when we annexed. And that actually appeared in the LUDR on page 3-7. That, on those big lots across the top, any pool or habitable structure has to be 170 feet. Well, the County has now changed their regulation and their standard is 150 feet in the County code. I met with the Planning

Director, Mike Shuttleworth, today, and brought that to his attention and we have a real life example now, where somebody wants to put their swimming pool between 150 and 170 feet. So, it's not academic and it just turned out that the County already changed their standard to 150 feet. We would like to have that standard then, adjusted, because it's the County that imposed it on the City to begin with and we just discovered it's in the LUDR. And I just happened to be coming here tonight to talk to you about the LUDR, so we would like your blessing to go to the City Council with this to move that standard back to 150 feet. It's still a huge setback, but they've now done further analysis and amended their own code to set it at 150 feet. Mike Shuttleworth, on the part of the County; he was here by the way, all through this whole process from day one; said the County had no issue with it since their own standard is 150 feet now. So, that's the other item I wanted to bring up.

And then, if I'm not out of time, one third thing: I know the City's considering going to a hearings examiner and from a liability standpoint, a lot of the cities are doing that. We're going to be sending a letter to the Council requesting that the Planning Commission keep jurisdiction over Badger Mountain South, because, this is more complicated and we have always sought your input. And, when we come before you with changes, before we even introduce them we roll them past you to get your thoughts so we can modify them before we actually submit an application. We don't want that process to change. It's the Council's decision on that, but I just wanted you to know what our position is and we will be requesting the Council and we will also be testifying when that ordinance comes forward on that request. So, if that's something that's consistent with what you would want… If you don't want that, then that's okay, I won't ask for it. But, if that's something that this Commission would want, we would support and go forward asking the Council to modify whatever ordinance they come forward with to allow us to continue to come before you, since this has been an iterative process."

Chairman Utz closed the Public Hearing at 7:33 PM.

Discussion:

Commissioner Wise discussed individual garage door facade setbacks. **Mr. Combs** agreed that stair-stepping them back would be consistent with their vision and even further deemphasize the garage, but deferred to staff for their interpretation. **Chairman Utz** suggested modifying the verbiage to suggest stepping each garage back in succession. **Mr. Combs** stated they would work with staff to review and modify verbiage to include the suggestion.

Commissioner Berkowitz inquired about privacy courtyards on a corner lot. **Mr. Combs** informed the group that the ten foot setback would apply to both faces on a corner lot and different regulations applied due to traffic safety so vision would not be impaired.

Commissioner Berkowitz inquired about three car garages in regards to sustainability. **Mr. Combs** stated their preference for an alley load to avoid garage frontages, curb cuts and improve sidewalk safety. His experience had been that a third car garage would not add much driveway traffic because the majority of homeowners use their additional garage space as storage or shops. So, he doesn't consider it a sustainability issue.

A motion was made by Commissioner Madsen and seconded by Commissioner Boring to concur with the findings and conclusions set forth in Supplemental Staff Report Z2014-100 with modifications as reflected in the testimony and recommend to the City Council adoption of the proposed amendments to the Badger Mountain South Land Use & Development Regulations.

Vice-Chair Moser asked if staff concurred with the proposed change to pool setbacks. **Mr. Simon** confirmed their agreement.

MOTION CARRIED 9-0.

New Business

1. **APPLICANT: EMERALD OF SIAM RESTAURANT (SUL2014-001)**
   APPROVAL OF A SIDEWALK USE LICENSE TO AUTHORIZE THE OPERATION OF A SIDEWALK CAFÉ AT 1314 JADWIN AVENUE

Mr. Simon reviewed the staff report, with images on the overhead, for the requested outdoor seating area in front of 1314 Jadwin Avenue. The proposal calls for a 42" high railing around an area approximately 12 feet wide and 26 feet long. In 2009, the City adopted Sidewalk Use Licenses to encourage the use of outdoor seating areas for which the Applicant must provide insurance. The proposed 42" railing satisfies the Washington State Liquor Control requirement.

Chairman Utz opened the Public Hearing at 7:40 PM.

William Quinn, 1412 Putnam Street: "I think that it's a great idea to have a sidewalk café, especially for our business right now. We've actually been in business for thirty years. And recently, my sister and I took over business and we've torn down walls inside. And, we've added in a bar and we're having live music come from all over the Northwest to come play at this venue and we're very quickly getting known as the premiere place to go watch live music here in Tri-Cities. And, we're kind of trying to expand a little bit and this is about one of the only ways we can do it and it takes care of many problems for the business. One of which can affect other businesses around us, it's litter. People smoke cigarettes. They're gonna smoke cigarettes whether or not we have a café area in the evening. So, this is what I believe is a good solution for that, because it contains the smokers to a certain portion of the sidewalk and now we have these buckets here. When they're out by the driveway, the bums come by, they pick

through ‘em, they throw or the wind might just throw the tops off. But, pretty much, most days I pull in to work or pull away from work, I’ve seen somebody fish through there. And, I believe that if they’re contained within our own area, it’s gonna cut down on external traffic. We’re gonna give our customers a place to dispose of their outdoor trash, essentially, and keep them out from in front of Benjamin’s and Kelly’s and wandering up and down at our place to see a show.

During the day, we’d love to offer an opportunity to eat a meal in the sun. We get very little rain here in the Tri-Cities. Obviously, it’s great to have a picnic, sit out and enjoy the day. And, it will also allow our customers to get a little bit away from the music, cause we also offer dinner music now, Wednesday through Saturday. So, it’d offer our customers that want to have a more quiet conversation the opportunity to have a different place to sit. I basically think that there’s like no downfall to this idea.

Also, we are fortunate enough that the sidewalk moves away from the front of our building right where we propose to put in the café, which offers plenty of walking space. And, there’s a little water access that we tried to plan for the drawing to go around it and plenty of room for someone to come through and check that. We’re not trying to take up any space that the people need. And, I think it beautifies the front of the building to see people sitting outside or to see furniture available for that. Right now, we have to block out most of the sun with these window coverings, so it makes it harder to see into the building. You don’t get really an idea of what we have to offer, but at least it would draw the eye enough, the people would know. You know, to draw more business in. That’s kind of what we’re doing. We’re trying to expand our business and this is part of it.”

Chairman Utz closed the Public Hearing at 7:53 PM.

Discussion:

Commissioners Clark and Wise inquired about access to the outdoor area. **Mr. Quinn** pointed out the location of a proposed opening in the railing on the overhead display and an additional railing outside of their doorway to further assist them in taking care of the area. He informed all that an exit corridor out of the back of the building was nearly complete as well, but opening up an additional door was not a possibility at this time.

Commissioners Wise and Moser congratulated Mr. Quinn on the plan to expand their restaurant.

Vice-Chair Moser asked staff to confirm a single access door used for the Frost Me Sweet sidewalk café. **Mr. Simon** confirmed that a single door access was in use.

Commissioner Berkowitz offered her support, asked if the music would be piped outside and for their hours of operation. **Mr. Quinn** stated that there were no plans to pipe music outside, but they had considered the possibility of acoustic music in the outdoor area. Their regular hours included lunch service from 11:30AM - 2PM with

regular dinner hours Tuesday through Saturday from 5PM – 8:30 PM and a late dinner menu served until approximately 2AM.

Commissioner Berkowitz inquired about smoking and shade in front of their business. **Mr. Quinn** informed that the proposal should allow enough room within the outdoor café for smokers with trash receptacles outside of their dining hours. They planned to deter smoking during the dining hours. **Mr. Simon** reminded the group that the Benton-Franklin Health Department regulated smoking related issues. **Mr. Quinn** proposed umbrellas in the café area for shade.

Chairman Utz appreciated Mr. Quinn's efforts to contain the smoking areas and to add activity to the Uptown Shopping Center.

A motion was made by Commissioner Boring and seconded by Vice-Chair Moser to concur with the findings and conclusions set forth in Staff Report SUL2014-001 and approve the request for the sidewalk use license to operate a sidewalk café subject to the conditions set forth in Exhibit 2 of the Staff Report.

Discussion on the Motion:

Commissioner Wallner requested clarification of the railing location. **Mr. Simon** confirmed that the application included a proposal for the railing on the outside of the restaurant doorway, but it was not depicted on the map.

THE MOTION CARRIED 9-0.

Communications:

Mr. Simon

- Provided a copy of the letter from Kennewick Irrigation District from the February 26 meeting.
- Provided a copy of correspondence from the Department of Ecology stating that the Amon Basin falls under the City's Critical Areas ordinance, not under the shoreline jurisdiction. They also recommended long term monitoring of flows for future determinations.

Commissioner Wise

- Attended the Tuesday morning meeting of the Mid-Columbia Energy Initiative. A consulting firm found that one of the biggest impediments to economic development in the Tri-Cities was the lack of a sustainability plan. The organization formed a task force to explore such a plan.

Commissioner Berkowitz

- Requested a status on the hearings examiner.

Mr. Lemley

- Reported no decision on the hearings examiner.

Commissioner Clark

- Reported an Environmental Protection Agency proposal changing the definition of waters of the United States as a result of a Supreme Court ruling. It may affect the jurisdiction of creeks and streams.

Commissioner Jones

- Requested an update to the Commission roster phone numbers.
- Attended the Economic Development Committee meeting Monday discussing funding assistance to modify the façade of Malley's. Also, informed that the committee plans to recommend an eighty room, winery themed hotel for Columbia Point named The Escape Lodging.

Commissioners Madsen, Vice-Chair Moser and Chairman Utz

- Appreciated Mr. Combs' confidence and comments in favor of the Planning Commission versus a hearings examiner to provide a better overall result for our community with valuable input from Richland citizens.

ADJOURNMENT:

The March 26, 2014 Richland Planning Commission Regular Meeting 3-2014 was adjourned at 8:15 PM. The next regular meeting of the Planning Commission will be held on April 23, 2014.

PREPARED BY: Penny Howard, Recorder, Planning and Development

REVIEWED BY: _____

Rick Simon, Secretary
Richland Planning Commission

STAFF REPORT

TO: PLANNING COMMISSION PREPARED BY: RICK SIMON
FILE NO.: S2013-100 MEETING DATE: APRIL 23, 2014

GENERAL INFORMATION:

Applicant: HAYDEN HOMES (Z2013-106 & S2013-100)

Request: APPROVAL OF A REQUESTED CHANGE IN ZONING OF THE MAJORITY OF A 131.9 ACRE SITE, WHICH IS PRESENTLY ZONED AGRICULTURAL. A TOTAL OF 89.6 ACRES IS REQUESTED TO BE ZONED R-2S – MEDIUM DENSITY RESIDENTIAL. ANOTHER 17.6 ACRES IS PROPOSED FOR NOS – NATURAL OPEN SPACE ZONING. THE SITE IS ALSO PROPOSED TO BE DIVIDED THROUGH A PRELIMINARY PLAT KNOWN AS "CLEARWATER CREEK", CONSISTING OF 320 RESIDENTIAL LOTS, A 13.6 ACRE SCHOOL SITE, AND 11 OPEN SPACE TRACTS TOTALLING 32.09 ACRES.

Location: NORTH OF THE BURLINGTON NORTHERN RAILROAD; WEST OF STEPTOE STREET; SOUTH OF CLAYBELL PARK AND THE PLAT OF "THE HEIGHTS AT MEADOW SPRINGS" AND EAST OF THE AMON PRESERVE.

REASON FOR REQUEST:

The applicant is requesting approval of a zone change and a preliminary plat to allow for development of a 320 lot subdivision for single family residential development.

FINDINGS AND CONCLUSIONS

Staff has completed its review of the request for preliminary plat approval and, subject to the conditions set forth in the Technical Advisory Committee Report dated April xx, 2014 submits:

Findings of Fact:

1. The Richland Comprehensive Land Use Plan for this area designates the majority of the site as Low Density Residential, which allows for a range of density between 0 and 5 units per acre. The portion of the site lying within the Amon Wasteway is designated as Natural Open Space.
2. The Transportation Element of the Comprehensive Plan designates two collector streets planned to cross the subject site: an east-west collector street would provide a future connection between Leslie Road and Steptoe Street and the plan calls for the extension of Bellerive Drive from the north boundary of the site to the intersection with the east-west collector street.

3. The gross density of the proposed Clearwater Creek subdivision is 3.1 units per acre. The net density is 4.5 units per acre.
4. The proposed project would place a Natural Open Space zoning designation on the Amon Wasteway.
5. The proposed subdivision would provide for the extension of Bellerive Drive and also provides for the construction of an east-west collector street.

Conclusion of Law:

1. The proposed Clearwater Creek project is consistent with and would provide for development of the subject property in conformance with the density and type of land use envisioned in the land use element of the adopted comprehensive plan and would implement the collector street plan that is included in the City's Transportation Plan.

Findings of Fact:

6. The site is currently zoned AG – Agricultural.
7. The proposed change in zoning would designate the majority of the Site, approximately 91 acres as R2-S – Medium Density Residential Small Lot zone.
8. The proposed change in zoning would designate approximately 17.6 acres of the site, the portion that is known as the Amon Wasteway, as Natural Open Space.
9. The conditions of approval call for the City and applicant to enter into a "Property Use and Development Agreement" that would limit development of the site to detached single family units only and would prohibit the construction of duplexes within the project site.
10. Lots within the proposed subdivision meet the width and dimensional standards contained in the R2-S zoning district.
11. The proposed uses within the Amon Wasteway, a road crossing and pedestrian trails, are uses that are allowed within the Natural Open Space zone.

Conclusion of Law:

2. The proposed zoning is consistent with the regulations applicable to the R2-S zoning district, as conditioned in the Property Use and Development Agreement.

Findings of Fact:

12. Section 24.12.053 of the RMC sets forth standards for review of preliminary plats that require the Planning Commission to consider whether appropriate provisions are made for the public health, safety and general welfare and for such open spaces, drainage ways, streets or roads, alleys, other public ways, transit stops, potable water supplies, sanitary wastes, parks and recreation, playgrounds, schools and school grounds and all other relevant facts, including sidewalks and other planning features that assure safe walking conditions for students who only walk to and from school.

13. The proposed preliminary plat provides for the creation of a street system, including sidewalks and storm drainage systems that are consistent with City street standards;
14. The proposed preliminary plat meets the design standards contained in RMC Chapter 24.12 relating to street alignment, grade, width, intersections, access limitations and cul-de-sacs;
15. The proposed preliminary plat meets the design standards contained in RMC Chapter 24.12 regarding the configuration of lots and blocks regarding block length and width, and lot access, size and shape;
16. The proposed preliminary plat provides for the extension of domestic water, irrigation water, sanitary sewer and electrical power in a manner that is consistent with City standards;
17. City standards call for the construction of a Secondary Emergency Access Road (SEVA) to serve any development that contains 16 or more homes served by a single access road. The recommended conditions of approval proposed for the project require the installation of this SEVA road;
18. The City has wild land fire protection requirements that apply to homes built on or adjacent to steep slopes that would impact lots within the proposed plat. The recommended conditions of approval require compliance with these wild land fire protection requirements;
19. The proposed preliminary plat includes pedestrian trail corridors that would provide a trail system across the site and would provide links to the adjacent Claybell Park and Amon Preserve areas.
20. The project site is located within the Kennewick School District. The proposal includes a 13.6 acre school site that would provide for a future public school and would also provide opportunities for students living within the Clearwater Creek project to walk to and from school;
21. The proposed project is obligated for the payment of park mitigation fees as required under RMC Chapter 22.10. Additionally, the proximity of the existing Claybell Park, the playgrounds and open spaces that would typically be provided at a school site, the system of pedestrian trails proposed within the project and the adjoining Amon Preserve constitute appropriate provisions for parks and open spaces;
22. The proposed project is obligated for the payment of road impact fees as required under RMC Chapter 12.03. Additionally, the extension of collector streets as identified in the City's Transportation Plan and the construction of streets that are consistent with City design standards are appropriate provisions for roads;
23. Provisions for storm drainage are included in the Mitigated Determination of Non-Significance and in the Technical Advisory Committee Report that were prepared for this project and constitute appropriate provisions for storm drainage;
24. City staff and other public agencies have reviewed the project and have recommended specific conditions of approval as set forth in the Technical Advisory Committee report, dated April 23, 2014.

Conclusion of Law:

3. As conditioned the proposed subdivision makes appropriate provisions for the public health, safety and general welfare and for such open spaces, drainage ways, streets or roads, alleys, other public ways, transit stops, potable water supplies, sanitary wastes, parks and recreation, playgrounds, schools and school grounds and all other relevant facts, including sidewalks and other planning features that assure safe walking conditions for students who only walk to and from school.

Findings of Fact:

25. Following receipt of the application materials for the Clearwater Creek project, the City issued a Notice of Application on August 2, 2013;
26. The City received comments from the public and from public agencies identifying the need for additional environmental information;
27. The City issued a letter to the applicant on September 6, 2013 advising the applicant that additional information is needed in order to make a threshold determination under the provisions of the State Environmental Policy Act;
28. The applicants submitted a revised application and environmental checklist along with a grading plan, a Biological Report and a Geotechnical Site Investigation;
29. Based on this revised application and information submitted by the applicant, the City issued a Mitigated Determination of Non-Significance on March 4, 2014. A total of 29 mitigation measures were made part of the MDNS;
30. Comments from public agencies and from the general public were received by the City;
31. The City issued an addendum to the MDNS on April 18, 2014, in recognition that the applicants made further changes to the proposal, reducing the number of lots from 389 to 320 and in increasing the amount of open space to 32.09 acres;

Conclusion of Law:

4. Pursuant to Chapter 22.09 of the RMC (State Environmental Policy Act), impacts of the proposal have been appropriately identified and mitigated as set forth in the City's Mitigation Determination of Non-Significance, dated March 4, 2014 and as addended on April 18, 2014.

Findings of Fact:

32. Section 19.60.095 of the RMC requires that no preliminary plat application can be approved by the City unless it finds that:

A. The development application is consistent with the adopted comprehensive plan and meets the requirements and intent of the Richland Municipal Code.

B. Impacts of the development have been appropriately identified and mitigated under Chapter 22.09 RMC.

C. The development application is beneficial to the public health, safety and welfare and is in the public interest.

D. The development does not lower the level of service of transportation facilities below the level of service D, as identified in the comprehensive plan; provided, that if a development application is projected to decrease the level of service

lower than level of service D, the development may still be approved if improvements or strategies to raise the level of service above the minimum level of service are made concurrent with development. For the purposes of this section, "concurrent with development" means that required improvements or strategies are in place at the time of occupancy of the project, or a financial commitment is in place to complete the required improvements within six years of approval of the development.
E. Any conditions attached to a project approval are as a direct result of the impacts of the development proposal and are reasonably needed to mitigate the impacts of the development proposal;

33. As identified in Findings #1-11 and Conclusion #1-2, as listed above, the application is consistent with the comprehensive plan and with the City zoning regulations, as conditioned;

34. As identified in Findings #25-31 and Conclusion #4, as listed above, the impacts of the development have been appropriately identified and mitigated in accordance with RMC 22.09;

35. As identified in Findings #12-24 and Conclusion #3, as listed above, the application is beneficial to the public health, safety and welfare and is in the public interest;

36. As identified in the findings of fact entered into the record for the Mitigated Determination of Non-Significance for the proposed Clearwater Creek project, the development will not impact the level of service of transportation facilities. Specifically, the transportation impacts of the proposed Clearwater Creek project have been anticipated through the City's the City's Comprehensive Plan and Road Impact Fee regulations. Conformance with those plans and regulations ensures that the transportation level of service will not be negatively impacted.

37. The conditions of approval attached to the project through the MDNS and through the Technical Advisory Committee Report are as a direct result of the impacts of the development proposal and are reasonably needed to mitigate the anticipated impacts of the proposed development.

Conclusions of Law:

5. The application meets the criteria for approval as set forth in RMC Section 19.60.095.

6. **Based on the above findings and conclusions, approval of the proposed zoning changes and preliminary plat of Clearwater Creek is warranted because the project conforms to all applicable City plans and regulations and would be in the public interest.**

RECOMMENDATION

Staff recommends the Planning Commission concur with the findings and conclusions set forth in the Staff Report (Z2013-106 & S2013-100) and recommend that City Council approve the proposed change in zoning subject to the draft Property Use and Development Agreement and also approve the preliminary plat of Clearwater Creek subject to the conditions of approval set forth in the Technical Advisory Committee Report dated April 23, 2014.

ATTACHMENTS

A. Supplemental Information
B. Technical Advisory Committee Report, dated April 23, 2014
C. Public Works Engineering Memo, dated March 20, 2014
D. Property Use and Development Agreement
E. Notice of Hearing
F. Vicinity Map
G. Comprehensive Plan Map
H. Existing Zoning Map
I. Proposed Zoning Map
J. Application Materials
   i. Project Narrative
   ii. Environmental Checklist
   iii. Grading Plan
   iv. Utility Plan
   v. Biological Resources Report
   vi. Geotechnical Site Investigation
K. Public Comments
   i. Agency & Public Comments received on original Notice of Application – August, 2013
   ii. Agency & Public Comments received on MDNS – March, 2014
   iii. Additional Comments from Kennewick Irrigation District – dated April 8, 2014
   iv. Comments from Tapteal Greenway, dated April 16, 2014
   v. Comments from Forterra, dated April 10, 2014
L. Mitigated Determination of Non-Significance (MDNS), dated March 4, 2014
M. Addendum to MDNS, dated April 18, 2014
N. Plat Maps
   i. Original Plat Map (460 lots) dated June, 2013
   ii. Revised Plat Map (389 lots) dated November 12, 2013
   iii. Current Plat Map (320 lots) dated April 10, 2014

ATTACHMENT A
(Z2013-106 & S2013-100)

SUPPLEMENTAL INFORMATION

DESCRIPTION OF PROPOSAL

The proposed project, known as “Clearwater Creek” consists of a requested change in zoning on the majority of a 131.9 acre site. The site is presently zoned AG – Agricultural. A total of 89.6 acres of the site is requested to be zoned R-2S - Medium Density Residential. Another 17.6 acres is requested to be zoned NOS – Natural Open Space. Additionally, the site would be subdivided into 320 residential lots, a 13.6 acre school site and 11 open space tracts totaling 32.09 acres.

GENERAL INFORMATION

ENGINEER:	PLS ENGINEERING
ANNEXATION DATE:	1975
COMPREHENSIVE PLAN:	Low Density Residential (0 to 5 units/acre) & Natural Open Space
CURRENT ZONING:	AG – Agricultural & R1-10 Single Family Residential

SITE DATA

Residential Lots:	320
Average Lot Size:	6,662 square feet
Largest Lot:	14,124 square feet
Smallest Lot:	4,992 square feet
Open Space:	11 tracts, totaling 32.09 acres
School Site:	13.6 acres
Right-of-Way:	21.78 acres
Gross Density:	3.1 units/acre (Calculation based on 320 lots on 49.2 acres, with 21.8 acres of right-of-way & 32.1 acres of open space)
Net Density:	4.52 units/acre (Calculation based on 49.2 acres for lots and 21.8 acres for ROW)

Commercial Lots: 15.53 acres (separate comprehensive plan application that is not under review presently).

Total Site Size: 131.97 acres.

Physical Features: The site contains a natural drainage way (Amon Wasteway) that runs from south to north through the eastern half of the subject property. The Wasteway is used by the Kennewick Irrigation District for irrigation return flows and has a 400 foot wide easement across the wasteway. A second drainage (Amon Creek or the East Badger Drain) runs near the western property boundary and flows from south to north. Elevations along the eastern boundary, near Steptoe Street drop approximately 50 feet to the lowest portion of the drainage way and then rise again to the west in the central portion of the site. The highest elevations (at approximately elevation 585) are found in the southwestern corner of the property, while the lowest portion of the site is along the northern property boundary (at approximately elevation 495). There are also some steep slopes along the southern property boundary, which adjoins the Burlington Northern Railroad.

Portions of the site are subject to the City's Sensitive Areas Ordinance. Portions of the property that are located within the Amon Wasteway have slopes in excess of 15% as do some of the slopes along the southerly property boundary. There are no wetlands on the property, but there are off-site wetlands in the adjacent Amon Preserve area whose buffers do impact the site. In accordance with the City's Sensitive Areas Ordinance, the applicants submitted a geotechnical site investigation and a biological resources report.

The property contains a BPA transmission line and easement that runs across the site from the northeast to the southwest. The site is undeveloped and contains shrub-steppe vegetation throughout the site, except that the Amon Wasteway contains some riparian vegetation along drainage way.

SURROUNDING ZONING AND LAND USES

North - Adjacent property is zoned a mixture of NOS - Natural Open Space, PPF - Parks and Public Facilities and R-1-10 Single Family Residential zoning. Along the northeast corner of the subject property, the adjacent land is zoned R-1-10 and contains the existing Heights at Meadow Springs development, a subdivision of single family homes on lots averaging approximately 12,500 square feet in area. Those portions of the Amon Wasteway and the Amon Preserve that abut the northerly boundary of the site are zoned Natural Open Space. Claybell Park is also located along the northern boundary and is zoned Parks and Public Facilities. Bellerive Drive extends through the park and terminates at the property boundary.

South - The southern property boundary is the city limit boundary, formed by the BN railroad right-of-way. The ROW is 400 foot wide with the tracks located approximately 200 feet from the property boundary.

East - The Richland/Kennewick city limit boundary is located along the eastern project boundary. An existing single family neighborhood abuts the subject property.

West - Adjacent property is the Amon Preserve, which is zoned NOS - Natural Open Space. A Bonneville Power Administration electrical substation is located at the southwest corner of the site.

PROJECT HISTORY

The Clearwater Creek project was filed with the City in June of 2013. The original application was titled "Beer Falls" and consisted of an amendment to the comprehensive plan to change the land use designation of the easterly 15.5 acres of the site from low density residential to commercial; a zone change application to change the existing agricultural zoning to Neighborhood Commercial, Natural Open Space and Medium Density Residential and a preliminary plat application to divide the property into 460 residential lots. The proposal called for the open space areas to be deeded to the City.

The City issued a notice of application for the project and the City Parks and Recreation Commission, as called for by City code, held a public meeting to consider whether the open space dedications should be accepted or not. The Commission ultimately recommended to decline the proposed dedications and recommended that the City collect the standard park mitigation fees from the development. The City also received a total of 26 comments from the public concerning the environmental impact of the project.

Staff then directed the applicant to provide additional environmental information, including the preparation of a geologic hazard area study; a conceptual grading plan; a biological study and a traffic analysis concerning the traffic that would be generated by the proposed commercial development.

Hayden Homes responded with the submittal of a revised application, along with the requested geologic hazard area study, grading plan and biological study. The application consisted of a revised plat that included a future school site and 389 residential lots.

Based on the new information and revised plan, staff issued a Mitigated Determination of Non-Significance. This MDNS included only the residential and school portions of the proposed development. Additional information is still needed to evaluate the commercial portion of the project. When that information is submitted to the City, it will be evaluated and another environmental determination will be made. Then a public hearing process will be conducted to consider the proposed amendment to the comprehensive plan.

The City received comments from several public agencies and 49 citizens concerning the MDNS. Hayden Homes revised their application again by eliminating development

along the westernmost finger of the subject property and along the remainder of the western property boundary. This change reduced the number of residential lots to 321. It is this plan that is presently under review.

Comprehensive Plan: The Comprehensive Plan shows a land use designation of Natural Open Space for the portion of the subject property that contains the Amon Wasteway. The remainder of the subject property is designated as Low Density Residential (0 to 5 Dwellings/Acre). The plan defines the Natural Open Space and Low Density Residential land categories as follows:

Low Density Residential (LDR) - The LDR category includes single-family residential uses with an average density of 3.5 dwelling units per acre.

Natural Open Space (NOS) - The Natural Open Space category includes public lands intended to remain as long-term undeveloped open space with limited appropriate public access. This category primarily includes, for example, lands associated with the Yakima River floodplain, and islands in the Columbia River, steeply sloped areas, sensitive areas along the Amon Basin and other designated areas. Natural Open Space lands are managed as natural areas and may include riparian corridors along creeks and rivers, wetlands, shrub-steppe, open ridges and hillsides.

Policies contained within the comprehensive plan relating to the project include the following:

Land Use Goal 2: The City will establish a broad range of residential land use designations to accommodate a variety of lifestyles and housing opportunities.
Policy 1: The City will provide a balanced distribution of residential uses and densities throughout the urban growth area.

Land Use Goal 6: The City will protect and conserve its natural resources and critical lands and provide public access based on ability of the resource to support the use.
Policy 5: In cooperation with appropriate agencies, the City will identify and regulate the use of wetlands, essential habitat areas and other critical lands within the urban growth area.

In the transportation element of the plan, a proposed arterial collector street crosses the site from east to west and would provide a connection from Steptoe Street to Leslie Road. Bellerive Drive, another proposed arterial collector street would enter the site from the north and intersect with the east-west arterial collector street.

Existing Zoning: The property was assigned an AG - Agricultural zoning designation when it was annexed into the City in 1975. The purpose of the agricultural zone (as stated in RMC Section 23.14.010) is “a primary zone classification permitting essentially open land uses such as grazing lands or pasture, agriculture, and development of part-time small tract farming and other compatible uses of an open nature such as a cemetery, park, and recreational or similar uses on land which has favorable combinations of slope, climate, availability of water, or soil conditions. This zoning

classification is intended to be applied to some portions of the city that are designated as agriculture or as urban reserve under the city of Richland comprehensive plan."

Uses permitted within this zoning designation are limited to agricultural uses, single family dwellings on 5 acre tracts, pubic uses and a variety of commercial and recreational uses. Excavating, processing and removal of sands and gravels is permitted in the agricultural zone through the issuance of a special use permit.

Proposed Zoning: The Amon Wasteway, which covers some 17.6 acres of the site is proposed for NOS – Natural Open Space zoning. The purpose of this zoning designation (as identified in RMC 23.30.010(B)) states that "The natural open space use district (NOS) is a special use classification intended to provide area for the retention of publicly owned, natural open spaces that, due to their proximity to wetlands, shorelines, floodplains or critical habitat areas, are too sensitive for intensive use or development. This zoning classification is intended to be applied to those portions of the city that are designated as natural open space under the city of Richland comprehensive plan."

Uses permitted within the Natural Open Space zone are limited to public uses, parks and trails.

The bulk of the property, approximately 85 acres, is proposed for R-2 Medium Density Residential. The purpose of this zone classification is to permit "a higher density of population, encouraging small lot development conducive to energy conservation and to other factors contributing to the production of affordable housing, and including the establishment of duplex dwellings and providing for these one- and two-family residences a high degree of protection from hazards, objectionable influences, building congestion and lack of light, air and privacy. Certain essential and compatible public service facilities and institutions are permitted in this district. This zoning classification is intended to be applied to some portions of the city that are designated medium-density residential (5.1 to 10 dwellings per acre) under the city of Richland comprehensive plan."

Uses permitted within this designation include single family dwellings and typical accessory residential uses, parks, schools and other public uses.

Access/Transportation: The proposed project would be accessed by Steptoe Street on the eastern boundary of the project site and by Bellerive Drive on the northern boundary of the site. The City's transportation plan calls for an east-west collector street (Rachel Road) to would cross the property and ultimately extend beyond the western boundary of the project site, across the Amon Preserve to connect with Leslie Road.

Under the City code, the developer will be responsible for construction of the collector streets across the project site. Rachel Road would be extended from Steptoe to the western boundary of the site and Bellerive Drive would be extended from the northern boundary of the site to its intersection with Rachel Road. For construction of these collector street segments, the developer will receive a credit against the traffic mitigation

fees that would be collected for each home built within the Clearwater Creek subdivision. This practice is consistent with City code and ensures that the City's transportation plan is implemented as properties develop and also ensures that developers whose properties are encumbered with collector street routes are not unduly penalized for the cost of constructing those collector streets.

It is important to note that the Clearwater Creek project will not directly result in the construction of a road across the Amon Preserve. In fact, no decision has been made about the final alignment for the extension of the planned east-west collector street that would extend from the Clearwater Creek site to Leslie Road.

The identified need for an east-west collector street between Steptoe and Leslie has been in the City's plans since the 1990's, pre-dating the creation of the Amon Preserve. The City's original transportation plans called for an east-west alignment to go through what is now the Willowbrook subdivision. In 2000, the plan was amended to shift the proposed road south so that the street could function as a collector street without residential driveways directly accessing the street while still providing a tie between Leslie and Steptoe Street. A pre-condition of creating the Amon Preserve in 2006 was to provide the City with the ability to construct a road across the preserve property so that the City's street plan could be completed. The Amon Preserve creation documents states "…the City shall have the right to construct a public road across Amon Creek."

While the Clearwater Creek development will not extend a street through the Amon Preserve, the road location shown in the proposed plan will allow for several alternate alignments when the City ultimately needs to extend the new road to Leslie Road. At a time in the future when the connection to Leslie Road is prioritized for completion, a study will determine where and how such a street connection will be built. This public review process will consider alternate alignments and evaluate the environment, traffic, and monetary impacts of each. Recommended conditions of the Clearwater Creek preliminary plat approval call for the developer to cooperate with the City in planning for the best future road alignment and potentially call for the re-design of the later phases of the plat to ensure that the construction of Rachel Road occurs along the best alternative alignment.

Utilities: Domestic water and sewer services are available to serve this project. Sewer mains would be extended from the north plat boundary along Meadow Drive South, along Bellerive Drive and at the northwest corner of the plat where an existing sewer main is located within the Amon Preserve. Water mains would be extended from the eastern boundary of the project site along Steptoe Street. Electrical power is also available in the area to serve the proposed development. The project site is located outside of irrigation district boundaries of the Kennewick Irrigation District. The City owns a well in the area that is available for irrigation use. The applicants have the option of using City well water for irrigation or they could purchase water shares from the Kennewick Irrigation District.

Fire Safety: The City Fire Marshal noted that portions of the plat are adjacent to undeveloped properties and so are subject to the City's wild land fire protection

requirements. The Fire Marshal also noted that a secondary emergency vehicle access road is required.

Schools: The plat falls within the boundaries of the Kennewick School District. The application was routed to the district for review and comment as part of the City's Technical Advisory Committee review process. The District has not formally purchased the school site, nor have they provided written comments on the project, but are in the process of considering the site for a future school.

Parks: All residential projects are subject to the City's park mitigation ordinance and are required to dedicate land for park use; provide improvements to park property or pay a fee in accordance with Chapter 22.12 of the City Code. Initially, the applicants proposed the dedication of open space to the City; however; the Parks and Recreation Commission reviewed the proposal and recommended that the dedication of land be rejected. The applicants subsequently revised their proposal so that the proposed open space areas would be retained by Hayden Homes. Park mitigation fees would be required for each home constructed within the plat. A recommended condition of approval would require payment of fees to meet the provisions of City code.

State Environmental Policy Act (SEPA): The applicants submitted an environmental checklist, a geotechnical site investigation, and a biological resources report to the City along with their application. After review of these documents, the City issued a Mitigated Determination of Non-Significance on March 4, 2014, subject to 29 conditions. The City issued an addendum to the MDNS on April 18, 2014. All environmental documents are attached.

Criteria for Preliminary Plat Approval
According to Section 24.12.053 of the Richland Municipal Code, the Planning Commission cannot recommend approval of a preliminary plat application unless it finds that:

A. The preliminary plat conforms to the requirements of this title;
B. Appropriate provisions are made for the public health, safety and general welfare and for such open spaces, drainage ways, street or roads, alleys, other public ways, transit stops, potable water supplies, sanitary wastes, parks and recreation, playgrounds, schools and school grounds and all other relevant facts, including sidewalks and other planning features that assure safe walking conditions for students who only walk to and from school;
C. The public use and interest will be served by the platting of such subdivision and dedication; and
D. The application is consistent with the requirements of RMC 19.60.095.

Section 19.60.095 of the municipal code further requires the adoption of findings that:
A. The development application is consistent with the adopted comprehensive plan and meets the requirements and intent of the Richland Municipal Code.
B. Impacts of the development have been appropriately identified and mitigated under Chapter 22.09 RMC (State Environmental Policy Act).

C. The development application is beneficial to the public health, safety and welfare and is in the public interest.

D. The development does not lower the level of service of transportation facilities below the level of service D, as identified in the comprehensive plan; provided, that if a development application is projected to decrease the level of service lower than level of service D, the development may still be approved if improvements or strategies to raise the level of service above the minimum level of service are made concurrent with development. For the purposes of this section, "concurrent with development" means that required improvements or strategies are in place at the time of occupancy of the project, or a financial commitment is in place to complete the required improvements within six years of approval of the development.

E. Any conditions attached to a project approval are as a direct result of the impacts of the development proposal and are reasonably needed to mitigate the impacts of the development proposal.

Agency Comments: The City received comment letters from the Bonneville Power Administration, Washington State Department of Ecology, Washington State Department of Fish & Wildlife and the Kennewick Irrigation District. Copies of all correspondence received are attached.

The comment letter from Fish and Wildlife indicates that the Amon Wasteway is considered a water of the state and that makes the project subject to the agency's requirements for obtaining a Hydraulic Project Approval. On the other hand the Kennewick Irrigation District maintains that the Wasteway is only an irrigation return flow and are so is not a water of the state. In fact, the KID provided a second letter in which they specifically rebut Fish and Wildlife's position.

In addition to these comments, the City also prepared a Technical Advisory Committee Report, which provided a list of conditions of approval that should be attached to the Clearwater Creek project, if it is to be approved by the City. (Copy Attached).

Public Comments: Public comments were solicited on two occasions for this project. The first instance occurred when the City issued the initial notice of application on August 2, 2013. A total of 33 comments were received from the public. These comments most commonly expressed concerns regarding the impact of the project on the Amon Preserve, the environmental impact of the project, the inadequacy of the application to address environmental issues and the need for an environmental impact statement. The second instance that the City solicited public comments is when it issued the Mitigated Determination of Non-Significance on March 4th. A total of 49 comments were received. The majority of these comments expressed concerns with the future planned extension of the collector road from the project site across the Amon Preserve to Leslie Road.

More recently, comments have been received from the Tapteal Greenway and Forterra. All public comments received to date are attached.

ANALYSIS

The project that is before the Commission for review has been modified significantly from the one that was first submitted to the City in 2013. The number of residential lots has been reduced from 460 to 320; the amount of proposed open space has been increased from 23.2 acres to 32.09 acres; the original site plan did not include a school site, while the present application would set aside 13.6 acres for a future school. The effect of the increase in open space area is that an open space buffer would be provided between the preserve and the proposed development. In order for the project to be approved, both the zone change application and the preliminary plat application would need to be approved.

The proposed comprehensive plan amendment for the 15.5 acres located along the eastern boundary of the site is not under consideration at this time. Additional information concerning the traffic impacts of commercial land use needs to be submitted in order to evaluate the impacts of the proposed commercial land use.

Comprehensive Plan Discussion

Criteria for the approval of a change in zoning are based on conformance with the comprehensive plan. In this case, the portions of the site that are proposed for development are identified as Low Density Residential in the comprehensive plan. The plan identifies low density residential as between zero and five dwellings per acre. The density of the Clearwater Creek project is 3.1 units/acre if open spaces are included in the calculation or 4.5 units per acre if they are not. While the plan is not specific in stating which calculation is to be used to measure density, both fit within the parameters of the plan. While the lots are significantly smaller than those in the adjoining neighborhoods to the north, the amount of open space provided serves to decrease the gross density significantly. As a point of comparison, the closest existing subdivision, the Heights at Meadow Springs, has a gross density of 2.8 dwellings/acre.

The R-2S zoning that is proposed would allow the density of development proposed; however; the zone also permits attached dwellings (duplexes). In order to ensure that the density remains consistent with the low density residential designation of the plan, staff recommends that the City and applicant enter into a property use and development agreement. This agreement would specifically stipulate that the provisions of the R2-S district would apply to the development, except that attached dwellings would not be permitted. The agreement would also address the setback issues on the lots off of Bellerive Drive that would be served by private access roads. A copy of the draft agreement is attached.

The lots that are proposed to be located in the northeast corner of the site, adjacent to the Heights at Meadow Springs subdivision are significantly larger than the rest of the lots in the proposed Clearwater Creek development. The average lot size of these seven lots is 11,709 square feet. To ensure that compatibility between these lots and the existing subdivision remains, the conditions in the MDNS specified that R1-10 standards for setback, lot coverage and building height would apply to these lots. This is also reflected in the property use and development agreement.

The other comprehensive plan issue relates to the City's transportation system. The plan calls for the extension of a collector street (Rachel Road) in an east-west orientation across the site to eventually connect Steptoe Street and Leslie Road and for the extension of a second collector street in north-south orientation that would extend Bellerive Drive to its intersection with Rachel Road.

The applicant's obligation in this case is to ensure that the collector road segments that cross the subject property include provisions for these collector roads. The application shows the extension of Bellerive Drive from the northern boundary of the site to its intersection with Rachel and for the construction of Rachel across the site. The design of the subdivision ensures that lots will not take direct access off of the collector streets but have alternative access from secondary streets or private driveways. Under the City's Road Impact Fee code (RMC 12.03), the applicants are responsible for construction of the collector roads across their site and will receive credit for this construction against the road impact fees that are obligated to pay as homes are built within the subdivision. The Road Impact Fee code provides for the payment of impact fees and the construction of collector streets in conformance with the comprehensive plan. No additional traffic studies are required for development that is consistent with the plan and the impact fee code. Because the project would implement the plan, and because the plan was developed to ensure that the City's transportation network would operate at a Level of Service D or better, there is no concern that the project would negatively impact the current level of service in the vicinity of the project site. In fact, the connection of Clearwater Creek to Bellerive Drive and Steptoe Street will ensure adequate traffic flow into and out of the site.

Given the relative importance of the east-west collector street across the site, provisions for early transfer to the street corridor are included in the TAC report. The condition requires the corridor to be transferred to the City concurrently with the development of Phase I of the project. This will ensure that this important element of the City's transportation plan will be implemented at the outset of the project.

The applicant's obligations end at construction of the collector road to the project boundaries. However, that will not result in the extension of the collector road to Leslie Road. As this future road will cross over the publically owned Amon Preserve, the City will need to construct this road segment. No decisions have been made to date regarding the best location for the road crossing. Prior to the time that the City determines that it should move ahead with the road construction project, it will conduct a study to consider alternative routes across the preserve. The study would consider the environmental impact of the road crossing, the effectiveness of the crossing location in meeting the needs of the transportation plan and financial impacts of the various alternatives considered. Once the City determines the preferred alignment, the applicants may need to adjust their plans in the later phases of the project to place the collector street at the proper location so that it aligns with the preferred crossing route. One of the conditions in the TAC report requires the applicants to do this.

Conformance with plat requirements

The criteria for approval of a subdivision as set forth in RMC 24.12.053 require the preliminary plat to conform to the requirements of the City's subdivision code. The application is consistent with the design standards contained in RMC Chapter 24.16 as they relate to street design requirements in terms of alignment, grade, width, intersections, access limitations and cul-de-sacs. The configuration of lots and blocks are likewise consistent with City standards regarding block length and width, and lot access, size and shape. The application provides for sidewalks along all public streets and in addition provides for a system of pedestrian trails throughout the project site. The inclusion of a school site within the project boundaries provides opportunities for students to walk to school and also provides for future playground and open space within the plat. The project's proximity to Claybell Park provides for park and recreation facilities for the future residents of the plat and the proposed open space tracts within the plat and in the adjoining Amon Preserve provide passive recreation opportunities. The conditions recommended for plat approval would ensure that appropriate provisions are made for storm drainage in a manner that is consistent with both City code and state law. The extension of city utilities would serve the proposed plat with potable water, irrigation water electrical power and sanitary sewer services.

Environmental Issues

The MDNS that was issued by the City is based on a number of factors, including the assumptions that were part of the City's combined 1997 comprehensive plan/environmental impact statement. The plan stated that the subject property and surrounding areas were suitable for low density residential development. The document recognized that the projected levels of development would create additional demands on housing, capital facilities, utilities and the transportation system. It further recognized that development would "*result in increased risk of impact on wetlands and habitat, increased erosion and sedimentation and potential landslide and seismic damage in some developed areas*." Despite identification of these impacts, the City adopted this plan and so doing recognized that there were unavoidable, adverse impacts that would result from the levels of development contemplated in the plan.

Since 1997, some changes have been made that have resulted in a higher standard of environmental protection. The City's Sensitive Area Ordinance has been revised, which requires increased buffer widths from wetland boundaries. Additionally, the Amon Preserve, a 76 acre open space area has been created, which protects the wetlands and wildlife habitat that exist along the West Fork of the Amon Basin.

The conditions of approval attached to the MDNS are designed to protect the Amon Preserve from the impacts of the Clearwater Creek project. Specific conditions are put in place to require the following:

- The on-site retention of stormwater facilities;
- An erosion control plan to protect the preserve during construction periods;
- The provision of a dust control plan;
- The placement of limitations on maximum grade along with requirements for re-vegetation of slope faces to reduce the risk of potential erosion;

- The re-vegetation of areas disturbed during the extension of sewer mains with native plant materials;
- The identification and staking of wetland buffer areas in the field to ensure that buffer standards are maintained during all construction activities;
- The fencing of the western boundary of the subdivision to limit pedestrian access into the preserve to designated trail locations;
- The placement of outdoor lighting restrictions for homes adjacent to the preserve to minimize light trespass;
- The development of a landscape plan within open space areas to provide wildlife habitat;
- The placement of the trail system outside of the vegetated buffer of the Amon Wasteway to reduce wildlife habitat impacts;

The combination of these mitigation measures work to reduce the impacts of the proposed project on the adjacent preserve area. The applicant's changes to the proposed plat through a reduction in the number of lots and the provision of a buffer between the project and the preserve area also work to reduce the impacts of the project.

Other potential impacts of the project include those on the built environment, including the City's transportation system, parks, schools and existing neighborhoods have also been considered. The applicants would construct the collector streets that are planned to cross the subject property and to pay road impact fees, which will ensure that transportation impacts are adequately mitigated. The proximity of Claybell Park, the amount of open space to be provided within the plat and the payment of park mitigation fees ensure that the project's impacts to the park system are mitigated. The provision of a school site within the project boundaries provides mitigation to the project's impacts to the school system. Density of the proposed project is higher than adjacent neighborhoods, but is consistent with the density standards contained in the comprehensive plan. Moreover, the site is well separated from existing neighborhoods. The only portion of the project that is directly adjacent to an existing neighborhood is in the northeast corner of the site and those particular lots are similar in size to the adjacent, existing neighborhood.

Public Comments

Some of comments from public agencies contradict each other. The State Department of Fish and Wildlife maintains that the Amon Wasteway is a waterway of the state. The Kennewick Irrigation District claims it is not. This is an important distinction because if the Amon Wasteway is a waterway of the state, the project would be is subject to state requirements and work within the Wasteway would have to be authorized through the issuance of Hydraulic Project Approvals issued by the state. Clearly, this issue needs to be resolved; however; the City is not is a position to make this determination. The City cannot make an interpretation of state law that could possibly bind an applicant to obtain a permit that is not legally required; or to exempt the applicant from a permit that is legally required. Rather, the applicants will have to work with the agencies themselves to reach a common understanding.

Mineral Rights

The City has received correspondence from Forterra, who are the owners of the site's mineral rights. (See attachment). The correspondence indicates that the City code requires that all parties having an ownership interest in the property to be platted must sign and acknowledge the final plat map. Forterra further indicates that they have not yet reached an agreement with the applicants. This situation does not impact the preliminary plat, but before the final plat process can be completed, the applicants will need to reach an agreement with the mineral rights owner. This requirement is not listed in the TAC conditions of approval, as it is specified in the City code (RMC 24.12.080).

SUMMARY

The project has demonstrated conformance with the City's comprehensive plan and therefore should receive approval of the requested changes in zoning. Aappropriate provisions are made for the public health, safety and general welfare and for such open spaces, drainage ways, street or roads, alleys, other public ways, transit stops, potable water supplies, sanitary wastes, parks and recreation, playgrounds, schools and school grounds and all other relevant facts, including sidewalks and other planning features that assure safe walking conditions for students who only walk to and from school. The Clearwater Creek plat application is consistent with City standards for streets and utility line extensions and as recommended in the TAC report includes appropriate provisions to ensure the public health, safety and general welfare.

ATTACHMENT B
(S2013-100)

RICHLAND PLANNING COMMISSION
TECHNICAL ADVISORY COMMITTEE REPORT (S2013-100)
APRIL 23, 2014

APPLICANT:	HAYDEN HOMES
REQUEST:	PRELIMINARY PLAT APPROVAL TO SUBDIVIDE APPROXIMATELY 116.4 ACRES INTO 320 RESIDENTIAL LOTS, A 13.6 ACRE SCHOOL SITE AND 11 OPEN SPACE TRACTS (CLEARWATER CREEK).
LOCATION:	SOUTH OF CLAYBELL PARK, EAST OF THE AMON PRESERVE, NORTH OF THE BN RAILROAD AND WEST OF STEPTOE STREET.
ENGINEER:	PLS ENGINEERING

TECHNICAL ADVISORY COMMITTEE RECOMMENDATIONS

The Technical Advisory Committee conducted a review of the request and recommends that if the preliminary plat is approved, such approval be subject to the following conditions:

1. Prior to final plat approval**,** complete engineering plans indicating street design and grading, utility plans including water and sewer, electrical, street lighting, telephone, television cable, and natural gas shall be approved by the Richland Civil and Utility Engineering Division and shall be consistent with the requirements of the responsible departments or companies.

2. Secondary emergency vehicle access shall be provided in accordance with City standards and in a location approved by the City Fire Marshal at the time that the first phase of the Clearwater Creek subdivision is constructed.

3. The street names and addresses shall be finalized at time of final plat submittal and review. Street naming and addressing shall be in conformance to RMC Chapter 12.01. The following note shall be placed on the final plat(s): **"Address numbers [noted in brackets] are subject to change by the City of Richland at time of building permit issuance."**

4. Portions of the plat are subject to the City's wild land fire protection requirements. To ensure that future lot buyers are properly informed of the specific wild land fire requirements, the following note shall be placed on the final plat: "*All lots within the plat that abut the Amon Wasteway or the Amon Preserve are subject to the City's Wild Land Fire Protection requirements as delineated in Richland Municipal Code Section 21.01.030 or as they may be modified in the future. All strucutures built on these lots must be developed with noncombustible*

siding, soffit, and skirting on the side adjacent to the wild-land area. Decks or porches 36 inches or less in height shall have skirting. Skirting shall be sufficiently constructed so as not to allow the accumulation of combustible material under the deck or porch. The area under the deck or porch shall not be used for storage."

5. The requirements for a specific trail plan and the maintenance of the trail system area addressed in conditions 18 and 21 of the MDNS for the project (File #EA4-14. Trail design shall conform with the comments of the Department of Ecology correspondence dated 3/20/14, with trails located outside of vegetated buffers as much as possible. If trails are not permitted within the Amon Wasteway by the Kennewick Irrigation District (per their comments of 3/20/14) then, trail easements shall be provided along the rear property boundaries of lots adjacent to the Amon Wasteway within Phases 1, 5 and 6 of the project. Locations where the trail crosses the public street shall be subject to review and approval of the City and shall be aligned with street intersections to the greatest degree practicable.

6. The applicant shall comply with all mitigation conditions identified in the Mitigated Determination of Non-Significance (EA#04-14) dated March 4, 2014 and the Addendum, dated April 18, 2014.

7. Prior to final platting of phases 8, 10, 11 or 12, Hayden Homes will cooperate with the City of Richland in completing an alignment study for the future extension of Rachel Road to the west. The results of this study may require the applicants to reconfigure the lots and streets in one or more of those phases.

8. Preliminary plat approval is subject to compliance with the conditions of approval set forth in the attached memorandum from the Civil and Utility Engineering Division dated March 20, 2014.

9. Preliminary plat approval is subject to compliance with the requirements legally established by the Bonneville Power Administration, the Kennewick Irrigation District, the Washington State Department of Ecology and the Washington State Department of Fish and Wildlife.

CITY OF RICHLAND
PUBLIC WORKS ENGINEERING
DEVELOPMENT COMMENTS

DATE: March 20, 2014

TO: RICK SIMON, DEVELOPMENT SERVICES MANAGER

PLAT REVIEW BY: JASON REATHAFORD, ENGINEERING TECH 4
PETE ROGALSKY, PUBLIC WORKS DIRECTOR
JEFF PETERS, TRANSPORTATION ENGINEER

PROJECT NAME: CLEARWATER CREEK (S2013-100)

PROJECT LOCATION: WEST OF STEPTOE, SOUTH OF THE HIEGHTS AT MEADOW SPRINGS AND CLAYBELL PARK.

The Public Works Engineering Department has reviewed the preliminary plat received in this office on March 5, 2014, for the above referenced property and has the following conditions.

General Conditions:

1. All final plans for public improvements shall be submitted prior to pre-con on a 24" x 36" hardcopy format and also electronically in .dwg format compatible with the City's standard CAD software. Addendums are not allowed, all information shall be supplied in the specified 24 x 36 (and electronic) format. When construction of the infrastructure has been substantially completed, the applicant shall provide 3 mil mylar and electronic record drawings to the City. The electronic as-built record drawings shall be submitted in a AutoCAD format compatible with the City's standard CAD software. Electronic copies of the construction plans are required prior to the pre-con meeting, along with the multiple sets of paper drawings. The mylar record drawings (including street lights) shall be submitted and approved by the City before the final punchlist inspection will be performed. All final punchlist items shall be completed or financially guaranteed prior to recording of the final plat.

2. Any and all necessary permits that may be required by jurisdictional entities outside of the City of Richland shall be the responsibility of the developer to obtain prior to approval of construction plans.

3. A copy of the construction drawings shall be submitted for review to the appropriate jurisdictions by the developer and his engineer. All required comments / conditions from all appropriate reviewing jurisdictions (e.g.: Benton County, any appropriate irrigation districts, other utilities, etc.) shall be incorporated into one comprehensive set of drawings and resubmitted (if necessary) for final permit review and issuance.

4. Any work within the public right-of-way or easements or involving public infrastructure will require the applicant to obtain a right-of-way permit prior to construction. A plan review and inspection fee in the amount equal to 5% of the construction costs of the work within the right-of-way or easement will be collected at the time the permit is issued. A stamped, itemized Engineers estimate (Opinion of probable cost) and a copy of the material submittals shall be submitted along with the final plan submittal.

5. When the construction is substantially complete a paper set of "record drawings" shall be prepared by a licensed surveyor and include all changes and deviations. Please reference the Public Works document "RECORD DRAWING REQUIREMENTS & PROCEDURES" for a complete description of the record drawing process. After approval by the City of the paper copy, a mylar copy of the record

drawings shall be submitted along with a CAD copy of them. The electronic as-built record drawings shall be submitted in a AutoCAD format compatible with the City's standard CAD software. All final punchlist items shall be completed or financially guaranteed prior to recording of the final plat.

6. Public utility infrastructure located on private property will require recording of a City standard form easement prior to acceptance of the infrastructure and release of the final plat. The City requires preparation of the easement legal description by the developer two weeks prior to the scheduled date of acceptance. Once received, the City will prepare the easement document and provide it to the developer. The developer shall record the easement at the Benton County Assessor and return a recorded original document to the City prior to application for acceptance.

7. A pre-construction conference will be required prior to the start of any work within the public right-of-way or easement. Contact the Civil and Environmental Engineering Division at 942-7500 to schedule a pre-construction conference.

8. Site plan drawings which involve the construction of public infrastructure shall be drawn on a standard 24" x 36" drawing format to a scale which shall not be less than 1"= 40'.

9. All plan sheets involving construction of public infrastructure shall have the stamp of a current Washington State licensed professional engineer.

10. All construction plan sheets shall include the note "CALL TWO WORKING DAYS BEFORE YOU DIG 1-800-424-5555 (or "811")." Or: http://www.call811.com/

11. A copy of the preliminary plat shall be supplied to the Post Office and all locations of future mailbox clusters approved prior to final platting.

Design Standards:

12. Public improvement design shall follow the following general format:
    - A. Sanitary sewer shall be aligned on the north and west side of street centerlines.
    - B. Storm sewer shall be aligned on the south and east side of street centerlines.
    - C. Any sewer or storm manholes that are installed outside of public Right of Way shall have an acceptable 12-foot wide gravel access road (minimum) provided from a public street for maintenance vehicles.
    - D. 10-feet horizontal spacing shall be maintained between domestic water and sanitary sewer mainlines and service lines.
    - E. Water lines shall be aligned on the south and east side of street centerlines.
    - F. Watermains larger than 8-inches in diameter shall be ductile iron.
    - G. Watermains installed outside of the City Right of Way or in very rocky native material, shall be ductile iron and may need restrained joints.
    - H. All watermains outside areas zoned R1 shall be ductile iron.
    - I. Fire hydrant location shall be reviewed and approved by the City Fire Marshal.
    - J. Sewer mains over 15-feet deep shall be constructed out of SDR26 PVC, C900 PVC or ductile iron. The entire main from manhole to manhole shall be the same material. Private sewer service lines over 15-feet deep shall also be constructed of the same material, then transition to regular sewer piping above 15-feet.
    - K. Valves and manholes installed on private property shall be placed so as to avoid parked cars whenever feasible.
    - L. All utilities shall be extended to the adjacent property (properties) at the time of construction.
    - M. The minimum centerline finish grade shall be no less than 0.30 % and the maximum centerline finish grade shall be no more than 10.0 % for local streets.
    - N. The minimum centerline radius for all local streets shall be no less than 100-feet.

O. Any filling of low areas that may be required within the public Right of Way shall be compacted to City standards.
P. A overall, composite utility plan shall be included in the submitted plan set if the project is phased. This comprehensive utility plan benefits all departments and maintenance groups involved in the review and inspection of the project.
Q. A detailed grading plan shall be included in the submitted plan set.
R. For public utilities not located within public street rights-of-way the applicant shall provide maintenance access acceptable to the City and the applicant shall provide an exclusive 10-foot wide public utility easement (minimum) to be conveyed to the City of Richland.
S. Final design of the public improvements shall be approved at the time of the City's issuance of a Right-of-way Construction Permit for the proposed construction.
T. All public improvements shall comply with the State of Washington and City of Richland requirements, standards and codes.
U. All cul-de-sacs shall have a minimum radius of 45-feet to the face of curb to allow for adequate turning radius of fire trucks and solid waste collection vehicles.
V. Curb returns at minor intersections shall have a minimum radius of 25-feet. Curb returns at major intersections should have minimum radius of 30-feet but should be evaluated on a case by case basis.
W. All public streets shall meet design requirements for sight distance (horizontal, vertical and intersectional).
X. All driveways for commercial projects shall construct City standard commercial driveways. Radius-style driveways are not allowed.
Y. The final engineered construction plans shall identify locations for irrigation system, street lighting, gas service, power lines, telephone lines, cable television lines, street trees and mail boxes. All electrical appurtenances such as transformers, vaults, conduit routes, and street lights (including their circuit) need to be shown in the plan view.
Z. Construction plans shall provide or reference all standard drawings or special details that will be necessary to construct all public improvements which will be owned, operated, maintained by the City or used by the general public (Commercial Driveway, Curb, Gutter, Sidewalk, Water, Sewer, Storm, Street and Street lighting etc.).
AA. The contractor shall be responsible for any and all public infrastructure construction deficiencies for a period of one year from the date of the letter of acceptance by the City of Richland.

13. If the project will be built in phases the applicant shall submit a master plan for the sanitary sewer, domestic water, storm drainage, electrical, street lighting and irrigation system for the entire project prior to submitting plans for the first phase to assure constructability of the entire project. This includes the location and size of any storm retention ponds that may be required to handle runoff.

14. If the City Fire Marshal requires a secondary emergency vehicle access, it shall be included in the construction plan set and be designed to the following standards:
A. 2-inches compacted gravel, minimum (temp. SEVA only).
B. 2% cross-slope, maximum.
C. 5% slope, maximum. Any access road steeper than 5% shall be paved or be approved by the Fire Marshal.
D. Be 20-feet in width.
E. Have radii that are accommodating with those needed for City Fire apparatus.

Secondary emergency vehicles accesses (SEVA's) shall be 20-feet wide, as noted. Longer secondary accesses can be built to 12-feet wide with the approval of the City of Richland Fire Marshal, however turn-outs are required at a spacing acceptable to the Fire Dept. Temporary SEVA's shall be constructed with 2-inches of compacted gravel, at a minimum. Permanent SEVA's shall be paved with 2-inches of asphalt over 4-inches of gravel, at a minimum.

15. <u>SURVEY MONUMENT DESTRUCTION</u>:

All permanent survey monuments existing on the project site shall be protected. If any monuments are destroyed by the proposed construction, the applicant shall retain a professional land surveyor to replace the monuments and file a copy of the record survey with the City.

A. No survey monument shall be removed or destroyed (*the physical disturbance or covering of a monument such that the survey point is no longer visible or readily accessible*) before a permit is obtained from the Department of Natural Resources (DNR). WAC 332-120-030(2) states "It shall be the responsibility of the governmental agency or others performing construction work or other activity (including road or street resurfacing projects) to adequately search the records and the physical area of the proposed construction work or other activity for the purpose of locating and referencing any known or existing survey monuments." (RCW 58.09.130).
B. Any person, corporation, association, department, or subdivision of the state, county or municipality responsible for an activity that may cause a survey monument to be removed or destroyed shall be responsible for ensuring that the original survey point is perpetuated. (WAC 332-120-030(2)).
C. Survey monuments are those monuments marking local control points, geodetic control points, and land boundary survey corners. (WAC 332-120-030(3)).

When a monument must be removed during an activity that might disturb or destroy it, a licensed Engineer or Land Surveyor must complete, sign, seal and the file a permit with the DNR.
It shall be the responsibility of the designing Engineer to identify the affected monuments on the project plans and include a construction note directing them to the DNR permit.

Traffic & Streets:

16. The "Clearwater Creek" preliminary plat lies within the boundary of the South Richland traffic impact fee program (RMC 12.03). This plat shall therefore be subject to the fees administered by the program for any phase submitted for approval. Since this property is included within the program, it is exempt from the SEPA-related traffic study requirement (TIA). The developer of this proposed project shall receive "credits" for construction of Rachel Road and portions of Bellerive Drive as allowed under RMC 12.03, and as detailed in comment #17.

17. A note will be shown on the face of the final plat stating that Rachel Road and Bellerive Drive are classified as "Arterial Collector" streets. Subsequently, no driveways accessing single family lots will be allowed onto Rachel Road. Because of the topography and limited options for the property on the east side of Bellerive Drive, driveways will be allowed for lots 30-34, 49-53, and 45 & 46 only. The east half of this portion of Bellerive Drive will not be eligible for credit from the South Richland traffic impact fee program. The proposed access points onto Bellerive Drive are acceptable for this project, but any changes to said driveways will be subject to approval by the City Engineer.

18. Commercial/Retail access to Rachel Road shall be limited. Access points shall be no closer than 300-feet from the intersection with Steptoe Street. A traffic study shall be conducted by the developer to determine the lane configuration of Rachel Road from Meadows Drive South to Steptoe Street prior to permit approval for the first building project in "phase 16".

19. The following comments apply towards the construction timing of the street network within the Clearwater Creek preliminary plat:

    A. The entire Rachel Road corridor shall be dedicated to the City as public Right-of-Way from Steptoe Street to the western boundary of the preliminary plat prior to or concurrent with approval of the phase 1 final plat, or the first commercial site plan approval, whichever is submitted first. As an alternative to the public right of way dedication the developer can transfer the future Rachel right of way corridor to the City using an insured warranty deed.

B. Rachel Road shall be constructed from Bellerive Drive to its connection with Steptoe Street in conjunction with the project that constructs the 100th single family lot. It shall be constructed and accepted prior to final platting of that phase.

C. Rachel Road shall be constructed from Steptoe Street to the west property boundary of the preliminary plat in conjunction with the project that constructs the 200th single family lot. It shall be constructed and accepted prior to final platting of that phase.

D. Rachel Road shall be constructed from Steptoe Street to the west property boundary of the preliminary plat prior to the completion and acceptance of any school construction project.

E. Rachel Road shall be constructed from Steptoe Street to Meadows Drive South in its entirety, including all frontage improvements, in conjunction with the first commercial development within "Phase 16". Rachel shall be constructed and accepted prior to final acceptance of said commercial project.

F. Meadows Drive South shall be constructed in its entirety (including all frontage improvements) in conjunction with the first commercial development in phase 16 north of Rachel Road, or as part of phase 15. Meadows Drive South shall be constructed and accepted prior to final acceptance of either project.

20. If any section of either one of the collector streets noted above is required to be constructed as an "off-site" project, then it shall be constructed to the City's rural street standard. The frontage of said road shall be completed to City standards at the time that the phase which constructs the lots adjacent to it is developed. The portion of Rachel Road that is within the Amon wasteway (Tracts C & D) is an exception and shall be constructed in its entirety, including all frontage improvements, when built.

21. Portions of Rachel Road and Meadows Drive South are shown straddling the Amon wasteway property line. Written permission and/or permits from the governing agency shall be obtained prior to permitting and construction of these streets. The entire Right-of-Way corridor for these sections of roadway shall be dedicated to the City as ROW prior to acceptance of the project that constructed it. Alternatively the ROW's could be moved off of the Amon wasteway property to the greatest extent possible. See comment #2 above.

22. The note on sheet 1 concerning pedestrian facilities shall be amended as follows; "The 6-foot wide sidewalks installed in the open space tracts shall be maintained by the Clearwater Creek HOA".

23. The short road stubs numbered 1 – 4 in phases 13 and 14 do not meet City standards for public streets. These roads shall be private driveways that intersect Rachel Road via a City standard commercial driveway drop (no radius-style driveways allowed).

24. The proposed road medians shown on the pre-plat are not city-standard, and therefore shall be subject to review and approval by Public Works and by the Fire Dep't. Additional pavement width may be required on either side of the medians.

25. Sidewalks shall be installed along all public Right of Way frontages that building lots do not front on during construction of those phases (e.g., storm drainage ponds, tracts, parks, etc.).

26. The minimum centerline radius for all local streets shall be no less than 100-feet.

27. All proposed public Right of Ways that are narrower than 54-feet (streets narrower than 34-feet) shall have parking restricted, as per City standards. Street signs indicating restricted parking shall be installed prior to final platting at the developers expense. The restricted parking areas shall be

indicated on the final plats. Any private roads narrower than 34-feet shall have parking restricted on one side, and any roads 28-feet or narrower shall have parking restricted on both sides. Street signs indicating restricted parking shall be installed prior to final platting at the developers expense.

28. All private roads & driveways shall be constructed to provide for adequate fire truck & solid waste collection truck access & turnaround movements.

29. If the project is to be constructed in phases, all dead-end streets longer than 150-feet that will be continued later need to have temporary turn-arounds built at the end of them. The radius of these turn-arounds shall be 45-feet minimum, and shall be constructed of 2-inches of compacted top course gravel for slopes less than 5%, or of 2-inches of asphalt atop 2-inches of gravel for slopes greater than 5%. If the temporary turn around is not located within the final plat an easement with a 50-foot radius will be required.

Domestic Water:

30. The proposed preliminary plat is located mostly within the Tapteal 1 water pressure zone. The closest Tapteal 1 watermain is located in Meadows Drive South and Bellerive Drive to the north, and Steptoe street to the east. Build-out of this preliminary plat will require connection to all three of these existing water mains. These water main connections & extensions will be required to coincide with road construction. There is a portion of the preliminary plat that is above the Tapteal 1 pressure zone and is in Tapteal 2. The closest Tapteal 2 watermain is in Leslie Road to the west. It shall be the responsibility of the developer to extend a watermain to this property to serve domestic water at the time of plat construction. The minimum allowable water pressure as measured at the City water meter is 40 psi.

31. Domestic water shall be extended to the adjoining properties adjacent to the plat.

32. The developer will be required to demonstrate that all phases are capable of delivering adequate fire flows prior to construction plans being accepted for review. This may require looping of the watermain from off-site locations, or oversizing of the main where needed.

33. The fire hydrant layout shall be approved by the City Fire Marshal.

Irrigation Water:

34. The City has designated the Willowbrook Well as a non-potable irrigation source for this area, and has developed and adopted an irrigation master plan for its service area. The developer of Clearwater Creek shall design an irrigation water distribution system to conform to the City's irrigation master plan. Easements shall be provided on the final plat for this system where needed.

35. The developer of a previous, nearby project invested in modifications to the Willowbrook Well to activate it for irrigation use. The developer of Clearwater Creek shall comply with the conditions and responsibilities of a latecomer agreement for this system as approved by City Council.

36. The City's irrigation master plan is based on irrigation use and delivery rates that are supported solely by the Willowbrook Well. Any large irrigated spaces shall be designed to conform to the water delivery limits of the City's master plan. Portions of this development may impose instantaneous irrigation demands beyond the capacity of the Willowbrook Well. The developer shall be responsible for designing and constructing such system features as needed to match use rates to the Willowbrook Well's capacity. This may include storage and pumping facilities.

Sanitary Sewer:

37. The closest sanitary sewer available for this development is located in Meadows Drive South and Bellerive Drive to the north. It shall be the responsibility of the developer to extend a sewer main to this property to serve sanitary sewer at the time of plat construction.

38. A 10-foot wide exclusive sanitary sewer easement shall be provided for any sewer main that is outside of the public Right-of-Way. If any manholes are located outside of the public Right-of-Way, maintenance truck access to said structure may be required.

39. Sanitary sewer mains shall be extended to the adjoining properties adjacent to the plat.

Ground Water:

40. Groundwater may be present on this site. Given the amount of groundwater encountered in this area (in both developed and undeveloped areas), the possibility of an underdrain system being required exists. Please have test pits and/or bore-holes dug by a geotech engineer, and an evaluation from said engineer prior to permitting. If an underdrain system is not required, the geohydrology report needs to state so. The requested report also needs to address any potential groundwater impacts to existing properties downslope of the proposed preliminary plat. Also, if groundwater is encountered within 5-feet of finished grade during plat construction, an underdrain system will be required.

Storm Water:

41. This project will require coverage under the Washington State General NPDES Permit for Construction projects. The Developer shall be responsible for compliance with the permit conditions. The City has adopted revised standards affecting the construction of new stormwater facilities in order to comply with conditions of its NPDES General Stormwater Permit program. This project, and each phase thereof, shall comply with the requirements of the City's stormwater program in place at the time each phase is engineered. The project will require detailed erosion control plans.

42. All storm drainage systems shall be designed following the core elements defined in the latest edition of the Stormwater Management Manual for Eastern Washington. The Hydrologic Analysis and Design shall be completed based on the following criteria: Washington, Region 2, Benton County; SCS Type 1A – 24 Hour storm for storm volume. The applicant's design shall provide runoff protection to downstream property owners.

43. The flow-rate of the public storm drainage system shall be designed using the 2-Year, 3-Hour short duration Eastern Washington storm for pipe and inlet sizing using SCS or Santa Barbra method; no modifying or adding time of concentration; no surcharge allowed. Calculations shall be stamped by a registered professional engineer and shall include a profile of the system showing the hydraulic grade line. The calculations should include a 50-foot wide strip behind each right of way line to represent drainage from private property into the City system. Of that area, 50% shall be considered pervious and 50% impervious. Calculations shall include a profile for the design showing the hydraulic grade line for the system. Passing the storm downhill to an existing system will require a downstream storm system capable of accepting the water without being overwhelmed.

44. All construction projects that don't meet the exemption requirements outlined in Richland Municipal Code, Section 16.06 shall comply with the requirements of the Washington State Department of Ecology issued Eastern Washington NPDES Phase II Municipal Stormwater Permit. All construction activities subject to this title shall be required to comply with the standards and requirements set forth in the Stormwater Management Manual for Eastern Washington (SWMMEW) and prepare a Stormwater Site Plan. In addition a Stormwater Pollution Prevention

Plan (SWPPP) or submission of a completed erosivity waiver certification is required at the time of plan submittal.

45. If any existing storm drainage or ground water seepage drains onto the proposed site, said storm drainage shall be considered an existing condition, and it shall be the responsibility of the property developer to design a system to contain or treat and release the off-site storm drainage.

46. If there are any natural drainage ways across the proposed pre-plat, the engineered construction plans shall address it in accordance with Richland Municipal code 24.16.170 ("Easements-watercourses").

47. Prior to or concurrent with the submittal of the first phase the developer shall provide a Geotechnical report including the percolation rate of the soils in the area of any storm retention ponds. If the project constructs a storm retention pond then the engineer will need to demonstrate that the pond will drain itself within 24 hours after the end of a storm event, and not have standing water in it longer than that. Engineering solutions are available for retention ponds that do not perk within 24 hours.

48. Any discharge of storm water into the Amon wasteway will have to be permitted by any or all agencies with jurisdiction over it. These agencies may include (but not be limited to); Kennewick Irrigation District, Bureau of Reclamation, National Marine Fisheries Service, U.S. Fish and Wildlife, State of Washington Dept. of Fish and Wildlife, Department of Ecology, and Army Corps of Engineers. The amount of post-development storm runoff from the proposed site shall not exceed the amount of pre-development runoff.

49. If the storm drain pond slopes are greater than 25% or deeper than 4-feet, then a 6-foot fence will be required around the perimeter of the pond with a minimum 12-foot wide gate for maintenance vehicles. A maintenance road from the public Right of Way to the bottom of the pond is also needed (2-inches of compacted gravel, minimum). The City's maintenance of the pond in the future will consist of trimming weeds to maintain compliance with fire and nuisance codes, and maintaining the pond for functionality.

50. The developer shall be responsible for landscaping the storm pond and for its maintenance through the one-year infrastructure warranty period. At a minimum the landscaping plan should be consistent with the City's intended maintenance standard as described above. If the developer wishes for the pond to be landscaped and visually appealing, then the homeowners association should be considered for maintenance responsibilities. This will require an irrigation meter and sprinkler system (including a power source), and responsibility for maintaining the landscaping.

51. The developer of record shall maintain the public storm drainage system for one year from the date of final acceptance by The City of Richland (as determined by the issuance of the "Letter of Final Acceptance"). Said developer shall also thoroughly clean the entire system, including structures, pipelines and basins prior to the City warranty inspection, conducted 11 months after the Letter of Final Acceptance.

Solid Waste:

52. Due to limited turnaround space, the lots in phases 13 & 14 and the single family lots that are accessed off of the private driveways may have to transport their garbage cans to a location acceptable for solid waste pick-up.

Final Platting / Project Acceptance Requirements:

53. When the construction is substantially complete a paper set of “record drawings” shall be prepared by a licensed surveyor and include all changes and deviations. Please reference the Public Works document “RECORD DRAWING REQUIREMENTS & PROCEDURES” for a complete description of the record drawing process. After approval by the City of the paper copy, a mylar copy of the record drawings shall be submitted along with a CAD copy of them. The electronic as-built record drawings shall be submitted in a AutoCAD format compatible with the City’s standard CAD software. All final punchlist items shall be completed or financially guaranteed prior to recording of the final plat.

54. Public utility infrastructure located on private property will require recording of a City standard form easement prior to acceptance of the infrastructure and release of a certificate of occupancy. The City requires preparation of the easement legal description by the developer two weeks prior to the scheduled date of occupancy. Once received, the City will prepare the easement document and provide it to the developer. The developer shall record the easement at the Benton County Assessor and return a recorded original document to the City prior to application for final occupancy.

55. Any off-site easements or permits necessary for this project shall be obtained and secured by the applicant and supplied to the City at the time of plat construction and prior to final plat acceptance by the City.

56. Ten-foot wide public utility easements will be required on the final plat along both sides of all Right-of-Ways within the proposed plat.

57. The final plat shall include notes identifying all common areas including the private streets and tracts and acknowledging the ownership and maintenance responsibility by the homeowners association. A note shall be added to the face of the final plat that states: “*The private roads are for the use and benefit of the homeowners that abut said roads, and are to be maintained by said owners. The City of Richland accepts no maintenance responsibility for said roads*”.

58. A note shall be added to the face of the plat that states: “*The private drives within this plat are fire lanes and parking is restricted*. *The required no-parking signs shall be installed by the developer where applicable*.” Any private roads narrower than 34-feet shall have parking restricted on one side, and any roads 28-feet or narrower shall have parking restricted on both sides. Street signs indicating restricted parking shall be installed prior to final platting at the developers expense. The restricted parking areas shall be indicated on the final plats.

59. All landscaped areas within the plat that are in the public Right of Way shall be the responsibility of the property owners to maintain.

60. A one-foot “No access / screening easement” will be required along the Rachel Road Right of Way, and also portions of the Bellerive Drive Right of Way.

61. The intended use and ownership of all tracts within the plat shall be noted on the final plat.

62. Property with an unpaid L.I.D. assessment towards it must be paid in full or segregated per Richland Municipal Code 3.12.095.

63. Any restricted parking areas shall be indicated on the final plats.

PROPERTY USE AND DEVELOPMENT AGREEMENT

THIS AGREEMENT made and entered into this ____ day of _____, 2014, by and between the CITY OF RICHLAND and Hayden Homes (Petitioner).

W-I-T-N-E-S-S-E-T-H:

WHEREAS, the City of Richland is currently entertaining an application by the Hayden Homes, (hereinafter "Petitioner") for a change of zone covering a 131.9-acre site located in Benton County, Washington (hereinafter "Property") and more particularly described in Ordinance No. _____.

NOW, THEREFORE, it is agreed that if the subject Property is rezoned from AG - Agricultural to R2-S - Single Family Residential Small Lot and to NOS – Natural Open Space pursuant to said application, Petitioner for himself and for and on behalf of his heirs, successors and assigns, covenants and agrees as follows:

1. Development of the subject property shall be consistent with the proposed preliminary plat of Clearwater Creek, as revised April 10, 2014.

2. Residential development shall conform to the standards contained in the R2-S – Single Family Residential Small Lot zoning district as they exist now or are hereinafter amended; except that; only detached single family dwellings shall be permitted. No one-family attached dwellings or two-family detached dwelllings shall be permitted within the Clearwater Creek subdivision.

3. Any lot within the Clearwater Creek subdivision that is accessed by a shared private driveway as is proposed on Lots 1 – 4 and Lots 24 – 31 of Phase 1 of the Clearwater Creek subdivision shall observe the following setbacks:

    a. Setback from Public Right of Way – 20 feet minimum;
    b. Setback from edge of shared private driveway where access to lot is taken – 18 foot minimum;
    c. Setback from edge of shared private driveway where no access is taken – 6 feet minimum;
    d. Setback from side property line where no shared private driveways are present – 6 feet minimum;

4. Any lot within Phase 13 of the Clearwater Creek subdivision shall observe the setback and lot coverage requirement as established in the R1-10 – Single Family Residential zone as they exist now or are hereinafter amended.

This agreement shall be placed of record and the terms and conditions thereof shall be a covenant running with the land and included in each deed and real estate contract executed by Petitioners with respect to the subject Property or any part thereof. The City of Richland shall be deemed a beneficiary of this covenant without regard to whether it owns any land or interest therein in the locality of the subject Property and shall have the right to enforce this covenant in any court of competent jurisdiction.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands the day and year first above written.

CITY OF RICHLAND

Cindy Johnson City Manager	Hayden Homes Petitioner

APPROVED AS TO FORM:

Heather Kintzley
City Attorney

CITY OF RICHLAND

NOTICE OF PUBLIC HEARING

Notice is hereby given that the Richland Planning Commission, on Wednesday, April 23, 2014 will conduct a public hearing and review of the following applications submitted by Hayden Homes at 7:00 p.m. in the Council Chamber, Richland City Hall, 505 Swift Boulevard:

Z2013-106 – A request to change the following zoning designations: a change on 17.6 acres from Agricultural zoning to Natural Open Space for the portion of the Amon Wasteway lying northerly of the Burlington Northern Railroad and south of Claybell Park; a change on 89.6 acres from Agricultural zoning to Medium Density Residential – Small Lot zoning on property that is located both east and west of the Amon Wasteway, north of Burlington Northern Railroad and south of Claybell Park.

S2013-100 – A request for a preliminary plat approval for the subdivision of 116.4 acres into 321 single family residential lots; a 16.6 acre school site; and 11 open space tracts totaling 31.8 acres. The plat is called "Clearwater Creek", previously known as "Beer Falls". The location of the proposed plat is the same property that is proposed to be zoned for Medium Density Residential – Small Lot (see zoning changes listed above).

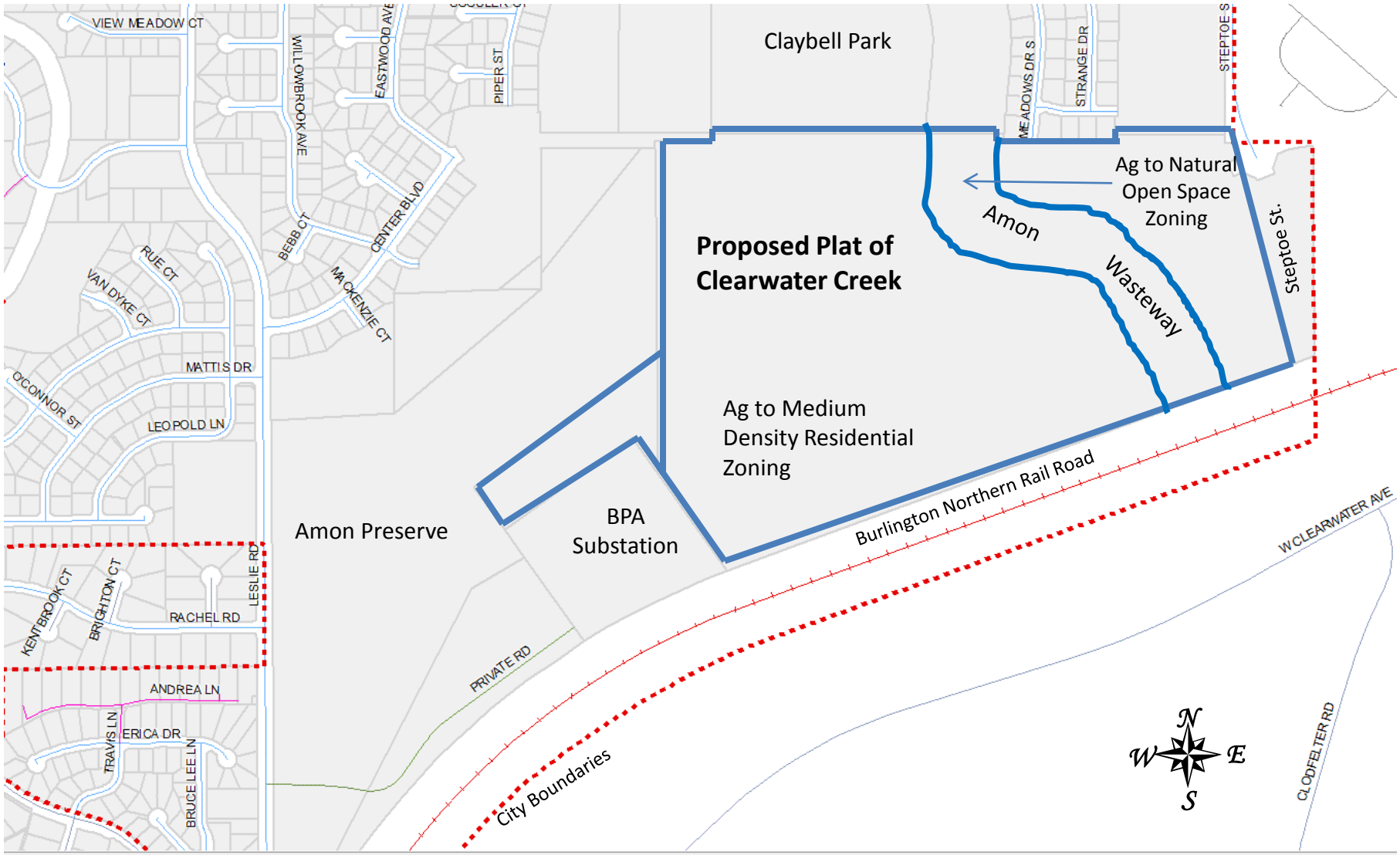
The application materials, including the environmental checklist, the Mitigated Determination of Non-Significance issued by the City and related file information are available for review at the Development Services Office or online at www.ci.richland.wa.us. To access the application materials online, start at the City's home page, then go to the Departments tab, then the Community and Development Services tab, then the Development Services tab, then the Clearwater Creek/Beer Falls tab.

Any persons desiring to express a view or to be notified of any decisions pertaining to this application should notify Rick Simon, Development Services Manager, 840 Northgate Drive, P.O. Box 190, Richland, WA 99352. Comments may also be faxed to (509) 942-7764. All persons have the right to comment on this application, receive notice of public hearing(s), participate in public hearing(s), and to be apprised of the decision made on the application and any appeal rights.

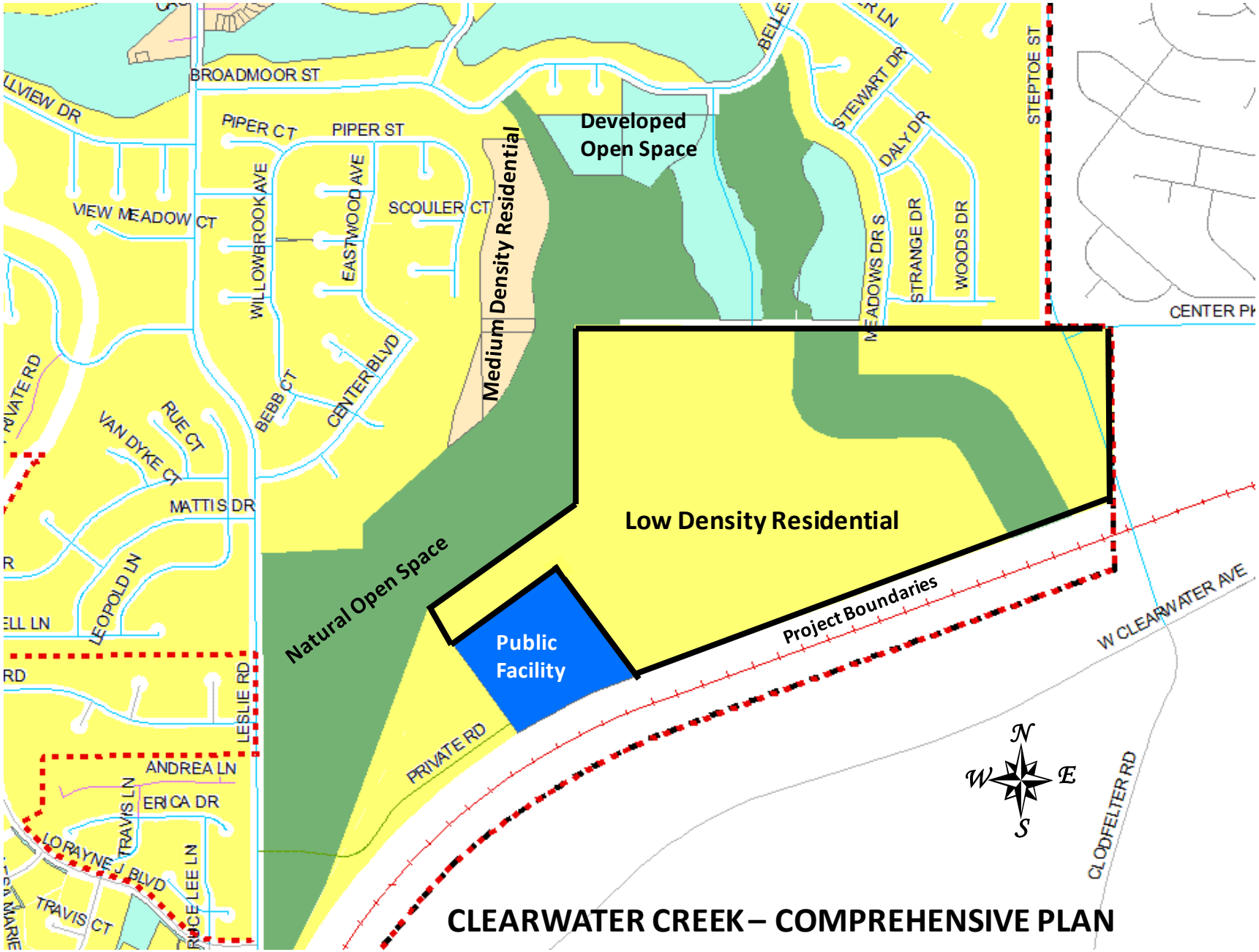
The Planning Commission will conduct a public hearing to consider these applications as required under Richland Municipal Code 23.70.210 and 24.12.050.

_____

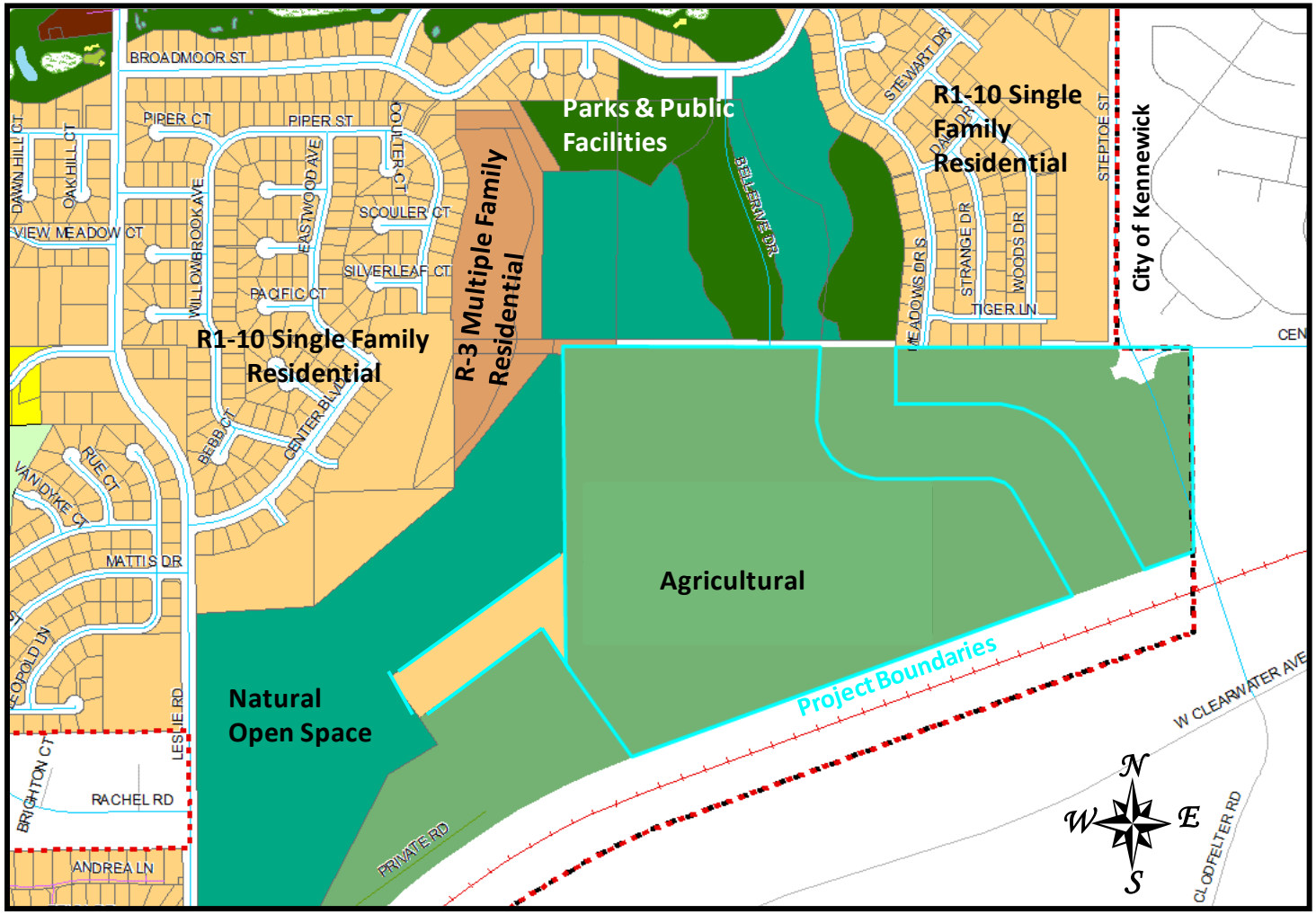
Rick Simon,
Development Services Manager



VICINITY MAP OF CLEARWATER CREEK



CLEARWATER CREEK – COMPREHENSIVE PLAN



CLEARWATER CREEK – EXISTING ZONING

CLEARWATER CREEK – PROPOSED ZONING

PLS ENGINEERING

PROJECT NARRATIVE
FOR
CLEARWATER CREEK

SUBMITTED TO
CITY OF RICHLAND

FOR

HAYDEN HOMES

June, 2013

Revised November, 2013

General Information

Applicant:	Hayden Homes, LLC 2464 SW Glacier Place, Suite 110 Redmond, OR Contact: Nathan Machiela (509) 544-0858 nmachiela@hayden-homes.com
Property Owners:	Parcel 101881000001000: John Michel 2555 W. Hwy 24 Othello, WA 99344 Parcel 101882000001002: Tom Solbrack 2555 W. Hwy 24 Othello, WA 99344
Project Contacts:	PLS Engineering Travis Johnson 2008 C Street Vancouver, WA 98663 PH: (360) 944-6519 travis@plsengineering.com
Location:	3548 Leslie Road
Project Size:	131.97 acres
Zoning:	Agriculture (AG) & Single Family Residential (R-1-10)
Comprehensive Plan:	Low Density Residential (0-5 units per acre), Natural Open Space (Amon Wasteway Easement area, only)
Current Use:	Vacant Land
Parcel Information:	101881000001000 & 101882000001002

Site Characteristics and Location

The proposed Clearwater Creek development is located at 3548 Leslie Road, and described by Benton County as Parcel ID 1018810000010000 & 101882000001002. The site is located in a portion of Section 1, T8N, R28E of the Willamette Meridian, Benton County, Washington.

The site area is approximately 131.97 acres and it is bordered by a 400' railroad right-of-way to the south and a residential subdivision to the east. To the west is City owned property designated as natural open space and to the north is an existing subdivision and other property zoned natural open space and developed open space including Claybell Park. The central portion of the property has a high point that slopes generally to the east and west. The east portion of the property slopes to the west.

Meandering through the site is an overflow irrigation channel within a 400' irrigation easement known as the Amon Wasteway. Also bisecting the site from southwest to northeast are side by side utility easements, a 50' wide Benton County easement and a 70' wide Bonneville Power Administration (BPA) Easement. Parcel 101881000001000 was recently impacted by a capital improvements roadway project that extended Steptoe Street in a generally north-south direction through the property, creating a triangular remainder parcel approximately 1.7 acres in size on the east side of the site.

The site is vacant with no structures and is covered by sagebrush and similar vegetation. Within the Amon Wasteway is a concentration of vegetation from the spring and summer irrigation water. Also located onsite within the previously mentioned BPA Easement are overhead power lines and utility poles.

Project Description

Clearwater Creek is a 131.97 acre project that incorporates open space areas with pedestrian paths, neighborhood commercial zoning and detached single family residential zoning. The residential portion of the development which encompasses 80.66 acres of the site is currently zoned Agricultural (AG) on parcel 101881000001000 and R-1-10 on Parcel 101882000001002 with a Comprehensive Plan designation of Low Density Residential on both parcels except for the Amon Wasteway Easement which has a Comprehensive Plan designation of Natural Open Space. The Comprehensive Plan designation of Low Density Residential will limit the residential portion of the site to 5 units per acre. The applicant proposes 389 single family lots on the 80.66 acres which results in a density of 4.67 units per acre and meets the goal of the comprehensive plan. As shown on the preliminary plat the applicant has proposed to sell lot 1 of Phase 17 to the school district for a future school.

The applicant is requesting a zone change for the residential portion of the property to a medium density residential zone (R-2S) to maximize the density of the property and meet the City of Richland's Comprehensive Plan for the site. The proposed request will require a developer's agreement between the City of Richland and Hayden Homes to set

thresholds on development standards to further meet the standards of low density of residential development. This agreement will limit Hayden Homes to a density of 5 units per acre and will not allow attached multifamily dwellings. The minimum standards are noted in Figure 1.

FIGURE 1

Standard	**R-2S**
Minimum Lot Size	4,000 sq. ft.
Maximum Density	5 Units Per Acre*
Minimum Lot Width	42’
Minimum Lot Depth	None
Maximum Lot Coverage	50%
Maximum Building Height	30’
Maximum Building Height of Detached Accessory Buildings	16’
Minimum Building Setbacks	See below
Front - Building	15’
Front - Garage	18’
Side - Street	15’
Side - Interior	6’
Rear	20’

*Density shall be calculated using gross area excluding the portion of the site within the Amon Wasteway easement and the areas proposed for commercial use.

The eastern portion of the site lies within parcel 101881000001000 and is currently zoned Agricultural (AG) with a Comprehensive Plan designation of Low Density Residential. The applicant has applied for a Comprehensive Plan Amendment and change of zone from (AG) to Neighborhood Retail Business (C-1). The commercial portion of the site is proposed as three separate lots within Phase 16 of the subdivision application; lot 1 at 3.34 acres, lot 2 at 10.5 acres and lot 3 at 1.7 acres.

The south boundary of the commercial use will abut a 400’ wide railroad right-of-way and will be bordered on the west by the 400’ Amon Wasteway irrigation easement, which is proposed as an open space tract. The north property line abuts the side by side utility easement that totals 120’ in width that is also proposed as an open space tract. A small portion of the north property line abuts a Low Density Residential zone and a 15’ wide landscape buffer is proposed between the uses to provide a physical and visual separation. As previously mentioned the parcel was recently separated by a capital facility project that extended Steptoe Street from north to south through the property which resulted in a triangular remainder piece of property totaling 1.7 acres (lot 1) on the east side of the site. The east side of lot 1 abuts a Low Density Residential zone where the applicant is also proposing a 15’ landscape buffer to provide a physical and visual separation and create a smooth transition from a residential use to a neighborhood commercial use.

The proposed commercial portion of the site is located in an area that will take advantage of the existing and proposed infrastructure network which includes the construction of Rachel Road, an arterial roadway that will bisect the site east to west and the already constructed Steptoe Street, also an arterial roadway. The proposed amendment will encourage new development and serve existing and future residences with all types of commercial uses meeting the goals and policies of the City of Richland's Comprehensive Land Use Plan. The placement of the proposed commercial uses at the intersection of two arterials is desirable compared to having this area zoned for residential development because it limits the potential for frequent driveways accessing directly onto the arterials.

The exact types of use and layout for the commercial portion of the project is unknown at this time, therefore if the Comprehensive Plan Amendment and Change of Zone application is approved a formal site plan application will be submitted at a future date meeting the City of Richland's code criteria for the Neighborhood Retail Business zone.

The Amon Wasteway 400' irrigation easement that runs north-south through the site is currently zoned Agriculture (AG). The applicant is requesting a change of zone from the current AG zone to Natural Open Space (NOS) which would be consistent with the Comprehensive Plan designation for this portion of the property. The Amon Wasteway will be crossed with one Arterial roadway, Center Parkway. There will also be grading that will occur within this area to make the commercial and residential portions of the development feasible for construction. The grading will also be necessary to serve the entire site with gravity sanitary sewer service. The applicant has also proposed a loop path system within the open space area to provide recreational opportunities for the residents within the residential portion of the development. A critical area assessment of the area within the Amon Wasteway easement was prepared by Larry Dawes with Biology Soil & Water, Inc. The assessment summarizes the irrigation canal as not containing jurisdictional wetland or stream areas, but recommends maintaining as much habitat as possible for wildlife.

Utilities and Services

The Clearwater Creek site lies within two separate water pressure zones. The water stubs provided in three locations on the north property line and the stub provided with the Steptoe Street capital improvement project will provide water for portions of the site at elevations lower than 556'. The remaining portions of the site which include portions of Phase 10 and 3 and all of Phases 11, 12, 13 & 14 will require pumps and individual pressure tanks to meet the minimum City of Kennewick requirements. There is a Tap II line located in Leslie Road 1400' west of the site that is utilized where elevations are greater that 556'. The difficulty of extending and using this line is there is no other Tap II line for looping and extension of the line would create a dead end main line that is not desirable. The construction costs of extending 1400' of offsite water main are unfeasible.

Sewer will be connected in two separate locations. There is a sewer main located in the northwest corner of the site that was constructed with the Leslie Sewer Trunk Line and there is also a sewer main stubbed to the site within Meadows Drive in the northeast

corner of the site. Both sewer mains will be extended throughout the development to serve the site.

Stormwater runoff from the north portion of the site will be collected in catch basins and routed to drywells throughout the site where the stormwater will be infiltrated into the ground. The catch basins and drywells will be located within the public roadway. An infiltration pond located within the Amon Wasteway easement is also anticipated to provide for infiltration of remaining site runoff.

The City of Richland will provide power, Comcast will provide the cable, and Verizon will provide the phone service. All utilities are readily available.

Grading

Site grading will be completed for construction of the roadways and to prepare the site for future home construction. Preliminary estimates of grading quantities are approximately 190,000 cubic yards of cut and 190,000 cubic yards of fill. These are preliminary estimates and the quantity may vary when the project reaches construction since the project is not yet fully designed. Fill materials will primarily be generated from on-site excavations or will be made up of imported rock and asphalt for construction of the roads and bedding of utility trenches. Compaction testing will be completed on all areas of structural fill. The testing will be completed by a geotechnical engineer or qualified testing company and shall meet the minimum requirements of Appendix J of the 2009 International Building Code. Currently, no retaining walls are proposed. At final grading, if it is determined that retaining walls over four feet are necessary, a building permit application will be submitted to the City of Richland for review and approval.

Transportation

Rachel Road will bisect the site in the east-west direction and Bellerive Road will enter the site from the north and will extend south to its intersection with Rachel Road. Both roadways are classified as Arterial Collector Roadways and will meet the City's DWG ST11 cross-section. All other roadways are proposed as Local Streets meeting the City's DWG ST 13 section.

Critical Areas Standards

There have been two separate critical areas assessments performed in association with the proposed development. One assessment by Biology Soil & Water Inc. (BSW) and another by PBS Engineering & Environmental (PBS). The assessment by BSW was summarized in a letter dated May 22, 2013 and states that there are no jurisdictional critical areas located on the site. PBS's assessment was summarized within a report dated November 4, 2013 and also determined that there are no jurisdictional critical areas on the site. PBS's study reviewed offsite properties and concluded that the West Fork Amon Creek just west of the site contains Category I wetlands and the 150' buffer for these wetlands encroach onto the proposed development. The portion of the property that is affected by the buffer will be placed in a Tract and dedicated to the City to be included in

the Amon Creek Nature Preserve. West Fork Amon Creek has a 100' secondary habitat buffer that does not encroach on the site and will not be affected by the proposed development.

SEPA

The State Environmental Protection Agency procedures require documentation of critical areas as well as discussion on earth, air, water, plants and animals, energy and natural resources, environmental health, noise, land and shoreline uses, aesthetics, recreation, historic and cultural preservation, transportation, and public services and utilities. A SEPA Checklist has been submitted with this application that addresses the above items. A SEPA Checklist is required in order to comply with State of Washington guidelines and has been provided for the Clearwater Creek development.

CITY OF RICHLAND
COMMUNITY & DEVELOPMENT SERVICES

File Number: EA04-14

ENVIRONMENTAL CHECKLIST

PURPOSE OF CHECKLIST:
The State Environmental Policy Act (SEPA), chapter 43.21C RCW, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. An environmental impact statement (EIS) must be prepared for all proposals with probable significant adverse impacts on the quality of the environment. The purpose of this checklist is to provide information to help you and the agency identify impacts from your proposal (and to reduce or avoid impacts from the proposal, if it can be done) and to help the agency decide whether an EIS is required.

INSTRUCTIONS FOR APPLICANTS:

This environmental checklist asks you to describe some basic information about your proposal. Governmental agencies use this checklist to determine whether the environmental impacts of your proposal are significant, requiring preparation of an EIS. Answer the questions briefly, with the most precise information known, or give the best description you can.

You must answer each question accurately and carefully, to the best of your knowledge. In most cases, you should be able to answer the questions from your own observations or project plans without the need to hire experts. If you really don't know the answer, or if a question does not apply to your proposal, write "do not know" or "does not apply." Complete answers to the questions now may avoid unnecessary delays later. Some questions ask about governmental regulations, such as zoning, shoreline, and landmark designations. Answer these questions if you can. If you have problems, the City can assist you.

The checklist questions apply to all parts of you pr proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agencies to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

USE OF CHECKLIST FOR NONPROJECT PROPOSALS:
Complete this checklist for nonproject proposals, even though questions may be answered "does not apply." IN ADDITION, complete the SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS (part D).

For non-project actions, the references in the checklist to the words "project," "applicant," and "property or site" should be read as "proposal," "proposer," and "affected geographic area," respectively.

A. Background

Agency use only

1. Name of proposed project, if applicable:

   Clearwater Creek

2. Name of applicant:

   Hayden Homes, LLC

3. Address and phone number of applicant and contact person:

   Nathan Machiela, Phone Number: 509-554-0858,
   Address: 2464 SW Glacier Place, Suite 110
   Redmond, OR 97756

4. Date checklist prepared:

   November 25, 2013

5. Agency requesting checklist:

   City of Richland

6. Proposed timing or schedule (including phasing, if applicable):

   The proposed application is for a phased master planned commercial and residential development to contain a total of 17 phases. 11.75 acres of the development is proposed for a future school as part of phase 17 of the development. Development will start on the residential portion of the site when all permits are approved. It is unknown when the commercial or school portion of the site will be developed.

7. Do you have any plans for future additions, expansion, or further activity related to this proposal? If yes, explain.

   None proposed at this time.

8. List any environmental information that has been or will be prepared related to this proposal.

   There have been two separate critical areas assessments performed. One assessment by Biology Soil & Water Inc. (BSW) and another by PBS Engineering & Environmental (PBS). The assessment by BSW was summarized in a letter dated May 22, 2013 and states

that there are no jurisdictional critical areas located on the site. PBS's assessment was summarized within a report dated November 4, 2013 and also determined that there are no jurisdictional critical areas on the site. PBS's study reviewed offsite properties and concluded that the West Fork Amon Creek, just west of the site contains Category I wetlands and the 150' buffer for these wetlands encroaches onto the proposed development. The portion of the property that is affected by the buffer will be placed in a Tract and dedicated to the City to be included in the Amon Creek Nature Preserve. West Fork Amon Creek has a 100' secondary habitat buffer that does not encroach on the site and will not be affected by the proposed development.

Agency use only

9. Are other applications pending for governmental approvals affecting the property covered by your proposal? If yes, please explain.

   None known.

10. List any government approvals or permits needed for your proposal:

    Final engineering approvals, final plat approvals, preliminary and final site plan approvals and building permit approvals will all be required from the City of Richland. A land use application will need to be submitted to the BPA. Permits will also likely be required from the Kennewick Irrigation District and/or the US Bureau of Reclamation for the proposed road and trail crossings of the Amon Wasteway.

11. Give a brief, complete description of your proposal, including the proposed uses and size of the project and site. There are several questions addressed later in this checklist asking you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

    The proposed application is for a master planned commercial and residential development with 11.75 acres for a future school. The application will require a Comprehensive Plan Amendment to change the designation of 16.45 acres from Low Density Residential to Commercial. The proposal also involves a change of zone of 16.45 acres from Agricultural (AG) to

Neighborhood Retail Business (C-1), a change of zone of 6.92 acres of Single Family Residential (R-1-10) to Medium Density Residential (R-2S), a change of zone of 19.01 acres from Agricultural (AG) to Natural Open Space (NOS), and a change of zone of 89.59 acres of Agricultural (AG) to Medium Density Residential (R-2S). For the residential portion of the site a preliminary plat application has been submitted for a 389 detached single family lot subdivision. A more formal site plan application will be submitted for the commercial and school portions of the site. It is unknown at this time how or when development will occur on the commercial and school portions of the site.

Agency use only

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including street address, section, township, and range. If this proposal occurs over a wide area, please provide the range or boundaries of the site. Also, give a legal description, site plan, vicinity map, and topographic map. You are required to submit any plans required by the agency, but not required to submit duplicate maps or plans submitted with permit applications related to this checklist.

    The site is located in a portion of Section 1, Township 8 North, Range 28 East of the Willamette Meridian. The site address is 3548 Leslie Road, Richland, Washington. Benton County mapping identifies the properties as parcel numbers 101881000001000 & 101882000001002.

B. Environmental Elements

1. Earth

a. General description of the site (circle one): Flat, rolling, hilly, steep slopes, mountainous, other _____.

The site is hilly.

b. What is the steepest slope on the site and the approximate percentage of the slope?

The steepest slope on the site is approximately 38%.

c. What general types of soils are found on the site (e.g., clay, sand, gravel, peat, muck)? Please specify the classification of agricultural soils and note any prime farmland.

Esquatzel Fine Sandy Loam (EsA) 14.4% of the site
Finley Stony Fine Sandy Loam (FfE) 7%
Hezel Loamy Fine Sand (HeA & HeD) 48.8% of the site
Quincy Loamy Sand (QuD) 21.9% of the site
Warden Very Fine Loamy Sand (WfB2) 7.9% of the site

Agency use only

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, please describe.

The City of Richland has mapped some portions of the site as Geological Hazard Areas (steep slopes) within the City of Richland Comprehensive Land Use Plan. A geotechnical site investigation which includes a geologic hazards assessment and critical areas report was completed for the entire site by GN Northern, Inc. and their findings were summarized in a report dated November of 2013.

The report states that upper portions of the site soils were found to be relatively loose and will require over-excavation and re-compaction to support structures. There are areas near the southern portion of the site where historic fill was placed for the railroad re-alignment that will require additional exploration. In summary the report states that native and proposed site slopes will remain stable and the risk posed by geologic hazards are considered negligible on this site.

e. Describe the purpose, type, and approximate quantities of any filling or proposed grading. Also, indicate the source of fill.

Preliminary quantities are approximately 190,000 cubic yards of cut and 190,000 cubic yards of fill. These quantities may change as phasing progresses. The source of fill will be through the on-site excavation areas.

f. Could erosion occur as a result of clearing, construction, or use? If so, please describe.

Yes, erosion could occur as a result of clearing or construction, as is the case for all construction sites. Site grading will be conducted under a specific erosion control plan developed by the project civil engineer and will follow the recommendations made by GN Northern, Inc. in their Geotechnical Site Investigation/Geologic Hazards Assessment & Critical Areas Report.

g. What percentage of the site will be covered with impervious surfaces after the project construction (e.g., asphalt or buildings)?

Approximately between 30% to 40% of the site will be covered by impervious surface within the residential portion of the site. The commercial portion of the site will likely be between 80% and 85% of impervious surface coverage.

Agency use only

h. Proposed measures to reduce or control erosion, or other impacts to the earth include:

An erosion control plan will be prepared by the project civil engineer. The plan will propose erosion control measures designed to minimize erosion impacts. Additionally during construction the contractor will follow the recommendations by GN Northern, Inc.

2. Air

a. What types of emissions to the air would result from this proposal (e.g., dust, automobile, odors, industrial wood smoke) during construction and after completion? Please describe and give approximate quantities.

The construction of this project would result in construction equipment exhaust and small amounts of dust. The dust would be mitigated by the use of a water truck to wet the ground.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, please describe.

No.

c. Proposed measures to reduce or control emissions or other impacts to air:

The project construction will utilize a water truck when operating during dry conditions. The project will have an erosion control plan in place to suppress derelict dust.

3. Water

a. Surface:

Agency use only

1) Is there any surface water body on or in the vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, and wetlands)? If yes, describe the type and provide names and into which stream or river it flows into.

   There is an irrigation channel named Amon Wasteway that meanders through the eastern part of the site within a 400' easement. Overflow irrigation water from Kennewick Irrigation is directed to the channel in the spring and summer. There is no hydrology within the channel during the fall or winter. Located on the property to the west there is an additional irrigation channel named West Fork Amon Creek which also holds irrigation water. This creek is apparently fed by springs throughout the year and is less dependent on irrigation return. There is a 100' buffer associated with this creek which is fully contained on the neighboring property. There is also a 150' wetland buffer that encroaches on the site from wetlands adjacent to West Fork Amon Creek. This area will be placed in a Tract and dedicated to the city.

2) Will the project require any work within 200 feet of the described waters? If yes, please describe and attach available plans.

   Yes, the Amon Wasteway will have a roadway crossing and some grading will occur within the 400' easement. Additionally, a few small trail crossings of the wasteway may be constructed in association with a planned neighborhood path system.

   There will be utilities and roadways installed and also lot grading will occur within 200' of the West Fork of Amon Creek. There is also a sewer main connection that will be made to serve the site. The Leslie Sewer Trunk line was installed parallel to the creek and is the only sewer line connection available to serve the majority of the site. A connection to this sewer line will be made near the northwest corner of the site and it will be within 200' of the West Fork. There will be no other disturbances within the above mentioned 150' buffer.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or

wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

Agency use only

The amount of fill specific for the roadway crossings and grading within the 400' Amon Wasteway easement is unknown at this time.

There is no proposed fill or dredging within the West Fork Amon Creek and associated wetlands.

4) Will the proposal require surface water withdrawals or diversions? Please provide description, purpose, and approximate quantities:

   No.

5) Does the proposal lie within a 100-year floodplain? If so, please note the location on the site plan.

   No.

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

   No.

b. Ground:

1) Will ground water be withdrawn, or will water be discharged to ground water? Please give description, purpose, and approximate quantities.

   Stormwater runoff from the site will be infiltrated into the ground utilizing Best Management Practices from the Department of Ecology. No groundwater will be withdrawn.

2) Describe waste material that will be discharged into the ground from septic tanks or other sources; (e.g., domestic sewage; industrial, containing the following chemicals. . . ; agricultural; etc.). Describe the size and number of the systems, houses to be served; or, the number of animals or humans the systems are expected to serve.

   Domestic sewage will be discharged to the City of Richland's public sewer system. There are two

separate connection points to the public sewer. One near the northwest corner of the site that was constructed with the Leslie Sewer Trunk Line and there is also a sewer main stubbed to the site within Meadows Drive in the northeast corner of the site. Both sewer mains will be extended throughout the development to serve the site.

Agency use only

c. Water runoff (including stormwater):

1) Describe the source of runoff (including storm water) and method of collection and disposal. Include quantities, if known. Describe where water will flow, and if it will flow into other water.

Stormwater will be collected from impervious surfaces on the site. Then the stormwater will be infiltrated into the ground using drywells that have been engineered and approved as an appropriate method of stormwater management for site runoff. Some portions of the site that have been previously filled or will be placed in fill through site grading will be required to be piped and placed within a surface infiltration pond that is proposed within the Amon Wasteway easement. The applicant is looking at several potential locations for this facility and the final location may change during final design of the site. All stormwater runoff is proposed to be contained on-site.

2) Could waste materials enter ground or surface waters? If so, please describe.

Not likely.

d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:

Stormwater will be collected within catch basins and pipes and will be infiltrated to prevent runoff impacts.

4. Plants

a. Check or circle types of vegetation found on the site
- Deciduous tree: alder, maple, aspen, ***other***
- Evergreen tree: fir, cedar, pine, other
- ***Shrubs***

- ***Grass***
- Pasture
- Crop or grain
- Wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
- Water plants: water lily, eelgrass, milfoil, other
- Other types of vegetation

Agency use only

Based on the Biological Resources Report by PBS Engineering & Environmental dated November 4, 2013 specific species present at the site include big sagebrush, rabbitbrush, cheatgrass, common yarrow, Cymopterus terebinthinus, Western tansymustard, Gray rabbitbush, Spiny hopsage, & Tall tumblemustard.

Specific species noted within the same report present within the Amon Wasteway include Russian olive, Reed canary grass, Black cottonwood, Siberian elm, Thicket creeper, Russian knapweed, Indian Helm, Catnip, Narrow-leaf willow, and Willows.

b. What kind and amount of vegetation will be removed or altered?

All vegetation will be removed within the site area to be developed to accommodate grading activities including utility extensions, construction of roadways, and grading to accommodate homes. Some of the area within the Amon Wasteway easement and areas along existing power lines will remain undisturbed.

c. List threatened or endangered species on or near the site.

No priority plant species were observed on the site during the biological review of the site.

d. List proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site:

The proposed landscaping will include native vegetation. In addition, non-developed areas of the site will be left in their natural state.

5. Animals

a. Circle any birds and animals which have been observed on or near the site:

- Birds: hawk, heron, eagle, songbirds, other; - *See below*
- Mammals: deer, bear, elk, beaver, other; and, - *See below*
- Fish: bass, salmon, trout, herring, shellfish, other. - *See below*

Agency use only

Based upon the biological assessment done by BSW there are no salmon or steelhead within the Amon Wasteway within the site's property boundary. There have been no other fish species observed on the site.

There have been restoration projects done to improve fish passage to the West Fork Amon Creek, but it is unknown what fish have been observed within this stream and no fish were documented by either BSW or PBS. The Tapteal Greenway Association notes that there are bass, salmon and trout within the West Fork Amon Creek, but these fish species have not been verified by a biologist in association with this project.

Types of birds observed near the site are songbird and hawks. The Columbia River Audubon Society has documented approximately 150 species of birds within the Amon Basin. Specific species of birds and their location are unknown. Burrowing owls are known to be in the vicinity of the subject property but no owls or identifiable burrows were found during PBS's visit to the site and the WDFW does not show presence on the subject property in their mapping..

During the site evaluation by PBS a number of black-tailed jackrabbits were observed. Based on comments received from the Tapteal Greenway there have been deer, beaver, coyote, American badger, river otters, mink and weasel on or near the site. Verification of these animals has not been observed by a biologist. The site also likely contains a variety of small mammals such as mice.

b. List any threatened or endangered species known to be on or near the site.

There are no known threatened or endangered species located on the site based on a site assessment performed by PBS Engineering and Environmental and discussions with Mike Ritter from Washington Department Fish and Wildlife.

The Ferruginous hawk is listed by Washington State as a threatened species. The Washington Department of Fish and Wildlife indicates potential presence in the general area (within a few miles). None were observed on-site by PBS and the WDFW staff contacted by PBS thought breeding on this site was unlikely due to the proximity of urban development.

Agency use only

c. Is the site part of a migration route? If so, please explain.

None known.

d. List proposed measures to preserve or enhance wildlife:

Landscaped areas and setbacks will provide forage and cover for small animals and birds. All landscaping will meet the City of Richland Code requirements.

6. Energy and natural resources

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

This project will primarily utilize electricity for heating, lighting, and mechanical operations. Natural gas may also be available.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, please describe.

No.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts:

The construction of this project will be executed in accordance with the current energy standards required by Washington State and the International Building Code.

7. Environmental health

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion,

spill, or hazardous waste that could occur as a result of this proposal? If so, please describe.

Agency use only

This project anticipates that normal use of heavy equipment (in accordance with OSHA guidelines) during the construction phase will result in low health hazard exposure.

1) Describe special emergency services that might be required.

   Emergency services could include: ambulance, fire, and police.

2) Proposed measures to reduce or control environmental health hazards, if any:

   No specific health hazard is identified.

b. Noise

1) What types of noise exist in the area which may affect your project (e.g., traffic, equipment, operation, other)?

   The primary source of noise generated off-site would be from vehicular traffic which will not affect the project. There is 400' wide railroad right-of-way that borders the south property line. The rail line is centered within the 400' right-of-way and results in a 200' buffer from the rail line to the property line. The rail line will be a noise nuisance and will decrease the value of the homes that border the rail line.

2) What types and levels of noise are associated with the project on a short-term or a long-term basis (e.g., traffic, construction, operation, other)? Indicate what hours the noise would come from the site.

   Short Term: Heavy construction equipment and building construction
   Long Term: Vehicular traffic.

3) Proposed measures to reduce or control noise impacts:

   None, no significant noise impacts are anticipated.

8. Land and shoreline use

Agency use only

a. What is the current use of the site and adjacent properties?

The site is currently vacant and there is no specific use. The property to the south is a 400' railroad right-of-way with a rail line centered within the right-of-way. The eastern portion of the property is bound by Steptoe Street and across the street are residential homes. To the north are residential homes and Claybell Community Park. To the west is open space known as Amon Creek Natural Preserve.

b. Has the site been used for agriculture? If so, please describe.

The applicant has no knowledge of agricultural use of the property.

c. Describe any structures on the site.

There are no structures located on the site.

d. Will any structures be demolished? If so, please describe.

No.

e. What is the current zoning classification of the site?

Agricultural (AG), Single Family Residential (R-1-10)

f. What is the current comprehensive plan designation of the site?

Low Density Residential (0-5 units per acre), Natural Open Space

g. What is the current shoreline master program designation of the site?

Not applicable.

h. Has any part of the site been classified as an "environmentally sensitive" area? If so, please specify.

No areas on the site have been classified as an environmentally sensitive area.

i. How many people would reside or work in the completed project?

Agency use only

Approximately 389 families within the residential portion of the project. It is unknown how many people will work in the commercial portion of the project and it is unknown how many people will work and attend the future school.

j. How many people would the completed project displace?

None.

k. Please list proposed measures to avoid or reduce displacement impacts:

Not applicable.

l. List proposed measures to ensure the proposal is compatible with existing and projected land uses and plans:

The commercial portion of the site will provide a landscape buffer to provide physical and visual separation when abutting an existing residential zone. The residential portion of the site will meet the comprehensive plan designation of the property by providing a residential unit density less than 5 units per acre.

9. Housing

a. Approximately how many units would be provided? Indicate whether it's high, middle, or low-income housing.

Approximately 389 units. The units will likely be middle income.

b. Approximately how many units, if any, would be eliminated? Indicate whether it's high, middle, or low-income housing.

No units will be eliminated.

c. List proposed measures to reduce or control housing impacts:

The applicant will pay all impact fees associated with the development.

Agency use only

10. Aesthetics

a. What is the tallest height of any proposed structure(s), not including antennas? What is proposed as the principal exterior building materials?

Building height will not exceed allowed maximum of 30' established by the zoning code. Exterior building materials are unknown at this time.

b. What views in the immediate vicinity would be altered or obstructed?

No views will be obstructed or altered by the proposed development. The landscape will change from natural vegetation to residential and commercial development so views of the property will be altered.

c. Proposed measures to reduce or control aesthetic impacts:

None, no aesthetic impacts are anticipated.

11. Light and glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

The project would provide street lighting to comply with the City of Richland requirements. The proposed lighting will occur from dusk until dawn.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

Not anticipated. Measures can be taken to reduce off-site glare.

c. What existing off-site sources of light or glare may affect your proposal?

None known.

d. Proposed measures to reduce or control light and glare impacts:

The project will have a comprehensive lighting placement plan consistent with the City of Richland standards. City of Richland code requires a cobra head shielded light that will direct light to the ground. The applicant's engineer will work with City of Richland staff to minimize lighting while providing enough light for vehicles and pedestrians.

Agency use only

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity?

Claybell Community Park borders the north property line of the site and the Amon Creek borders the west portion of the site and both provide recreational opportunities. Although the site is private property, it also appears it has been used for pedestrians, dog walkers, and off-road vehicles.

b. Would the project displace any existing recreational uses? If so, please describe.

No permitted formal recreational uses would be displaced. The informal use of this private property by pedestrians and dog walkers may be temporary discontinued until the trail and sidewalk systems through the site are complete. The use of the property by off-road vehicles will likely discontinue.

c. Proposed measures to reduce or control impacts on recreation, including recreational opportunities to be provided by the project or applicant:

Sidewalks and paths will be installed to create directional pedestrian control and improved recreational exercise opportunities, offering an all-weather, universally accessible surface to enter and exit the site and to connect with the area's sidewalk system. It is currently undetermined what surfacing type will be used for the proposed path system. The path is proposed to be 5'-6' wide.

13. Historic and cultural preservation

a. Are there any places or objects on or near the site which are listed or proposed for national, state, or local preservation registers. If so, please describe.

None known.

b. Please describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.

None known.

Agency use only

Mammoth bones have been found near the site. 3/4/14

c. Proposed measures to reduce or control impacts:

Not applicable.

14. Transportation

a. Identify the public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.

Bellerive Road and Meadows Drive enter the site from the north and Rachel Road will connect to Steptoe Street to the east. These streets connect to the existing street systems and are public right-of-way. The City plans to connect Rachel Road to the west to Leslie Road.

b. Is the site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?

The closest public transit stop appears to be approximately 1 mile east of the project site at the intersection of N. Center Parkway and W. Deschutes Avenue.

c. How many parking spaces would the completed project have? How many would the project eliminate?

No parking spaces will be eliminated. Each single family home will have approximately 4 parking spaces (2 driveway and 2 garage). It is unknown at this time how many parking spaces will be provided for the commercial portion of the site.

d. Will the proposal require new roads or streets, or improvements to existing roads or streets, not including driveways? If so, please describe and indicate whether it's public or private.

The proposed internal streets are classified as Local Streets and there are two Arterial Collector roadways

that will be constructed to City of Richland Standards. These streets will be public.

Agency use only

e. Will the project use water, rail, or air transportation? If so, please describe.

No.

f. How many vehicular trips per day would be generated by the completed project? Indicate when peak traffic volumes would occur.

Approximately 3,710 average daily trips for the residential portion. Peak volumes will occur approximately between 7:00 AM to 9:00 AM and 5:00 PM to 6:00 PM. It is not currently known how many vehicular trips will be generated by the commercial and school portions of the development.

g. Proposed measures to reduce or control transportation impacts:

Proposed roadways will be constructed to City of Richland standards.

15. Public services

a. Would the project result in an increased need for public services (e.g., fire protection, police protection, health care, schools, other)? If so, please describe.

No, the project currently falls within the urban growth boundary. Existing services are adequate to serve this project, however the residential portion will increase a demand for schools. The applicant has no knowledge of current school capacities, but the proposed development does provide 11.75 acres for a future school.

b. Proposed measures to reduce or control direct impacts on public services:

Impact Fees will be paid as required.

16. Utilities

a. Circle the utilities currently available at the site: ***electricity, natural gas, water, refuse service, telephone, sanitary sewer***, septic system, other.

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on or near the site:

Proposed utilities include: phone (Verizon), water (City of Richland), sewer (City of Richland), natural gas (Cascade Natural Gas), cable (Comcast), and power (City of Richland).

Agency use only

C. Signature

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: _____

Date Submitted: 3/4/2014

D. SEPA Supplemental sheet for non-project actions

Agency use only

Instructions:
Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment. When answering these questions, be aware of the extent of the proposal and the types of activities likely to result from this proposal. Please respond briefly and in general terms.

1. How would the proposal increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise?

   It would not be likely for the production, storage, or release of toxic or hazardous substances. Production of noise will result from construction and vehicular traffic.

   Proposed measures to avoid or reduce such increases are:

   None proposed.

2. How would the proposal be likely to affect plants, animals, fish, or marine life?

   The development of this property will involve the removal of small patches of grass and sage brush, however, there is little to no impact on animals and no impact on fish and marine life.

   Proposed measures to protect or conserve plants, animals, fish, or marine life are:

   No protection measures are proposed.

3. How would the proposal be likely to deplete energy or natural resources?

   Development of the property will result in the consumption of electricity.

   Proposed measures to protect or conserve energy and natural resources are:

   The property will be developed in compliance with all applicable building and energy codes.

Agency use only

4. How would the proposal use or affect environmentally sensitive areas or those designated (or eligible or under study) for governmental protection; such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?

   There are no known sensitive areas on the subject property.

   Proposed measures to protect such resources or to avoid or reduce impacts are:

   No measures are necessary.

5. How would the proposal be likely to affect land and shoreline use? Will it allow or encourage land or shoreline uses incompatible with existing plans?

   The site is not within a shoreline area.

   Proposed measures to avoid or reduce shoreline and land use impacts are:

   No measures are proposed.

6. How would the proposal be likely to increase demands on transportation or public services and utilities?

   The proposal will add traffic to the existing transportation system and will require services such as sewer, water, and electricity.

   Proposed measures to reduce or respond to such demand(s) are:

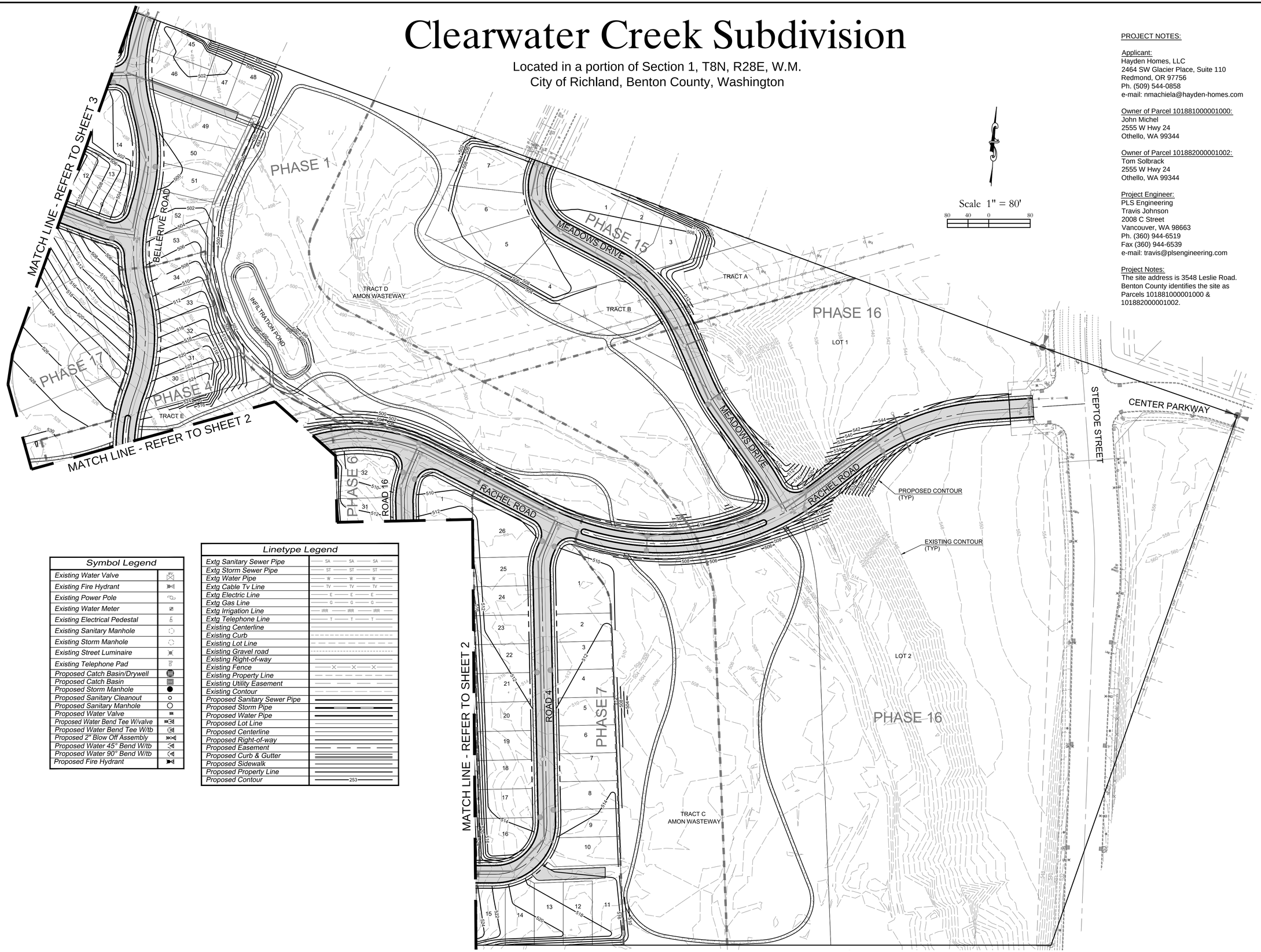
   No measures can be identified as necessary at this time.

7. Identify whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.

   The proposal will not conflict with local, state, or federal laws or requirements for the protection of the environment.

Clearwater Creek Subdivision

Located in a portion of Section 1, T8N, R28E, W.M.
City of Richland, Benton County, Washington



PROJECT NOTES:

Applicant:
Hayden Homes, LLC
2464 SW Glacier Place, Suite 110
Redmond, OR 97756
Ph. (509) 544-0858
e-mail: nmachiela@hayden-homes.com

Owner of Parcel 101881000001000:
John Michel
2555 W Hwy 24
Othello, WA 99344

Owner of Parcel 101882000001002:
Tom Solbrack
2555 W Hwy 24
Othello, WA 99344

Project Engineer:
PLS Engineering
Travis Johnson
2008 C Street
Vancouver, WA 98663
Ph. (360) 944-6519
Fax (360) 944-6539
e-mail: travis@plsengineering.com

Project Notes:
The site address is 3548 Leslie Road. Benton County identifies the site as Parcels 101881000001000 & 101882000001002.

Symbol Legend	
Existing Water Valve	
Existing Fire Hydrant	
Existing Power Pole	
Existing Water Meter	
Existing Electrical Pedestal	
Existing Sanitary Manhole	
Existing Storm Manhole	
Existing Street Luminaire	
Existing Telephone Pad	
Proposed Catch Basin/Drywell	
Proposed Catch Basin	
Proposed Storm Manhole	
Proposed Sanitary Cleanout	
Proposed Sanitary Manhole	
Proposed Water Valve	
Proposed Water Bend Tee W/valve	
Proposed Water Bend Tee W/tb	
Proposed 2" Blow Off Assembly	
Proposed Water 45° Bend W/tb	
Proposed Water 90° Bend W/tb	
Proposed Fire Hydrant	

Linetype Legend	
Extg Sanitary Sewer Pipe	SA SA SA
Extg Storm Sewer Pipe	ST ST ST
Extg Water Pipe	W W W
Extg Cable Tv Line	TV TV TV
Extg Electric Line	E E E
Extg Gas Line	G G G
Extg Irrigation Line	IRR IRR IRR
Extg Telephone Line	T T T
Existing Centerline	
Existing Curb	
Existing Lot Line	
Existing Gravel road	
Existing Right-of-way	
Existing Fence	X X X
Existing Property Line	
Existing Utility Easement	
Existing Contour	
Proposed Sanitary Sewer Pipe	
Proposed Storm Pipe	
Proposed Water Pipe	
Proposed Lot Line	
Proposed Centerline	
Proposed Right-of-way	
Proposed Easement	
Proposed Curb & Gutter	
Proposed Sidewalk	
Proposed Property Line	
Proposed Contour	253

PLS ENGINEERING

Preliminary Grading Plan For:
Clearwater Creek Subdivision
A Subdivision Located In Richland, Washington

Consulting Engineers & Planners | 1014 Franklin Street, Atrium Suite, Vancouver, WA 98660 | PH (360) 944-6519 | Fax (360) 944-6539

Revisions

A	11-19-13	Submitted For Review
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TGJ

Project No. 2291

SCALE:	H: 1" = 80' V: N/A
DESIGNED BY:	TGJ
DRAFTED BY:	TGJ
REVIEWED BY:	AJG

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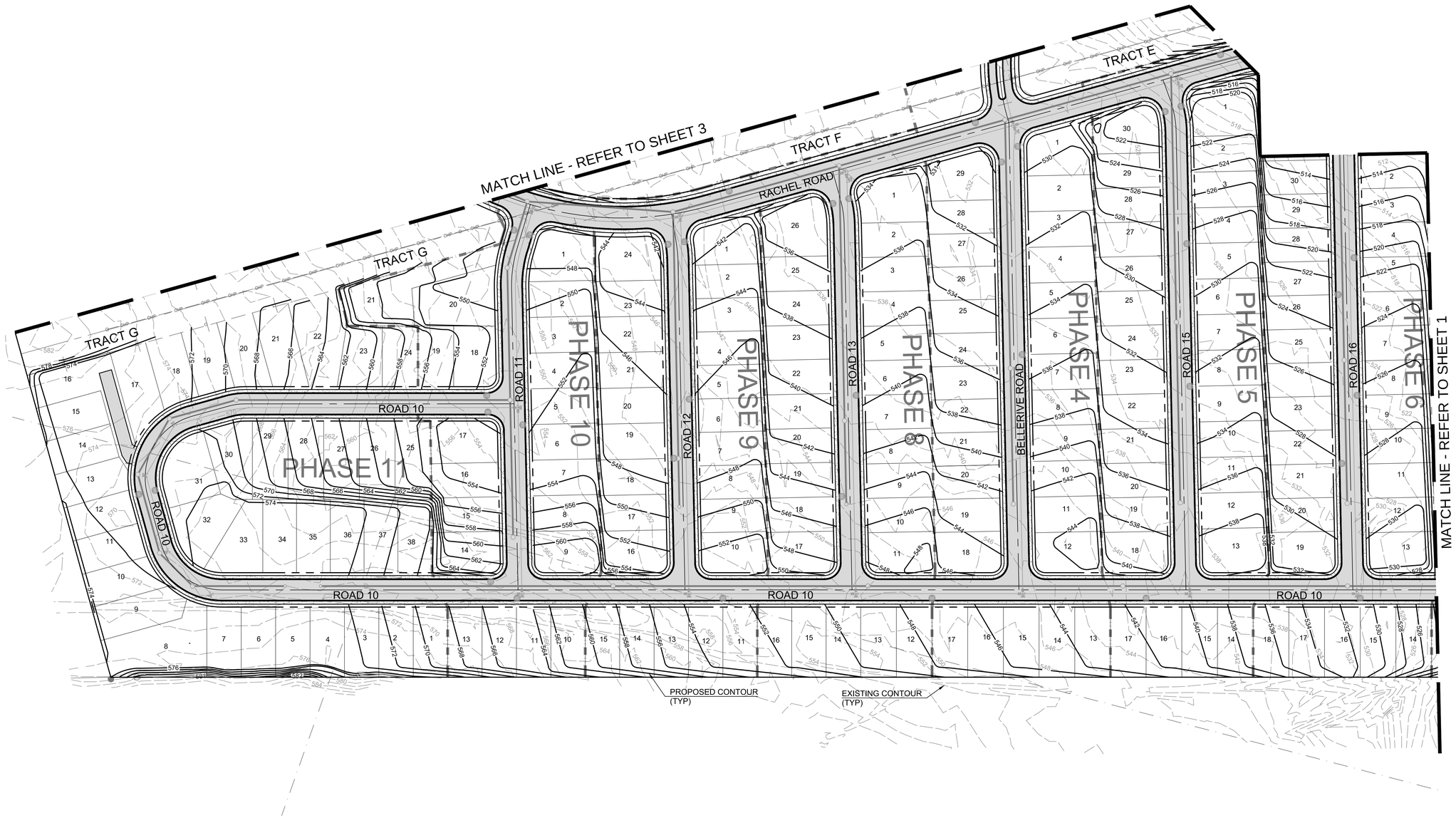

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Clearwater Creek Subdivision

A Site Located In Richland, Washington

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PLS ENGINEERING

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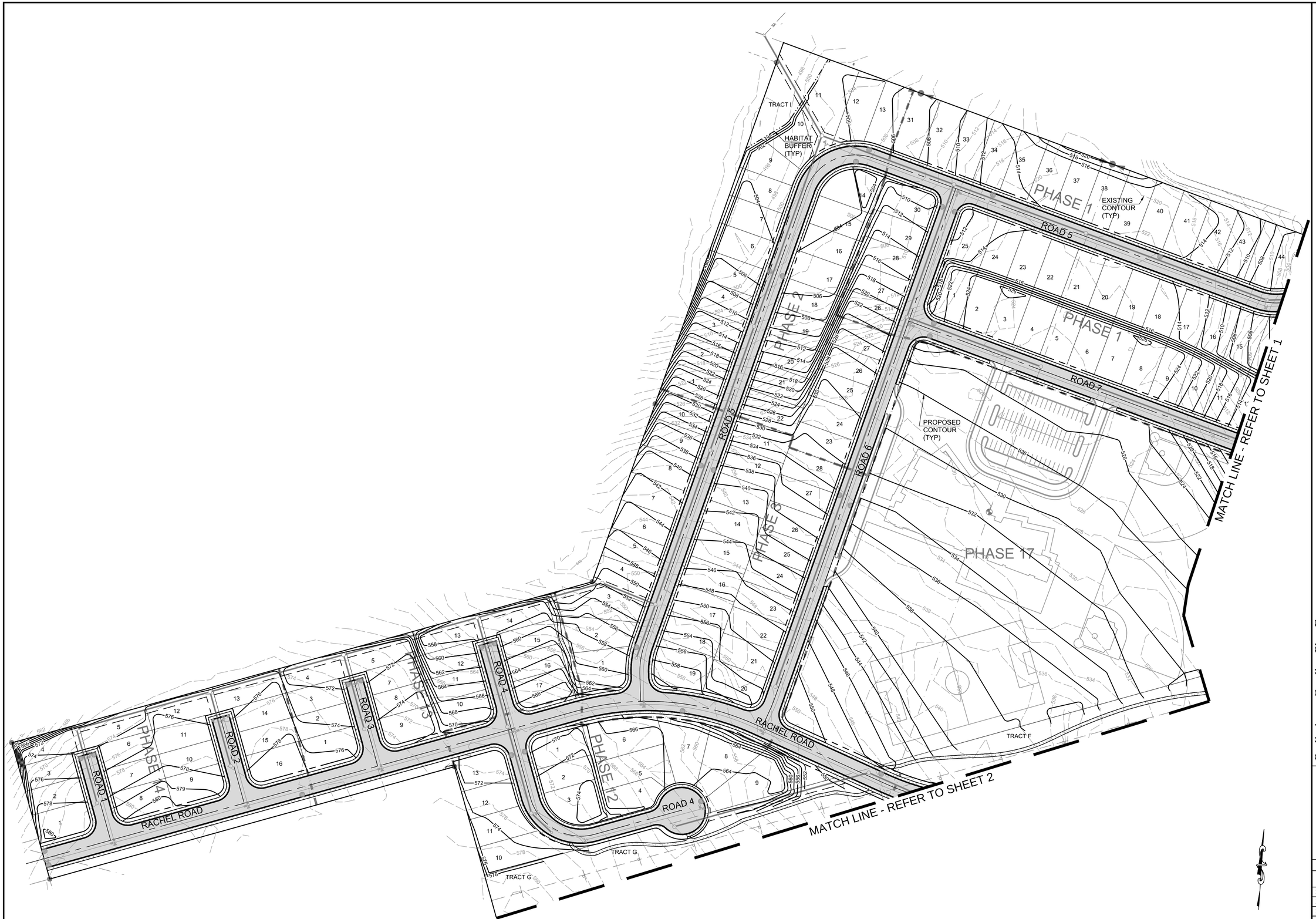

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Clearwater Creek Subdivision

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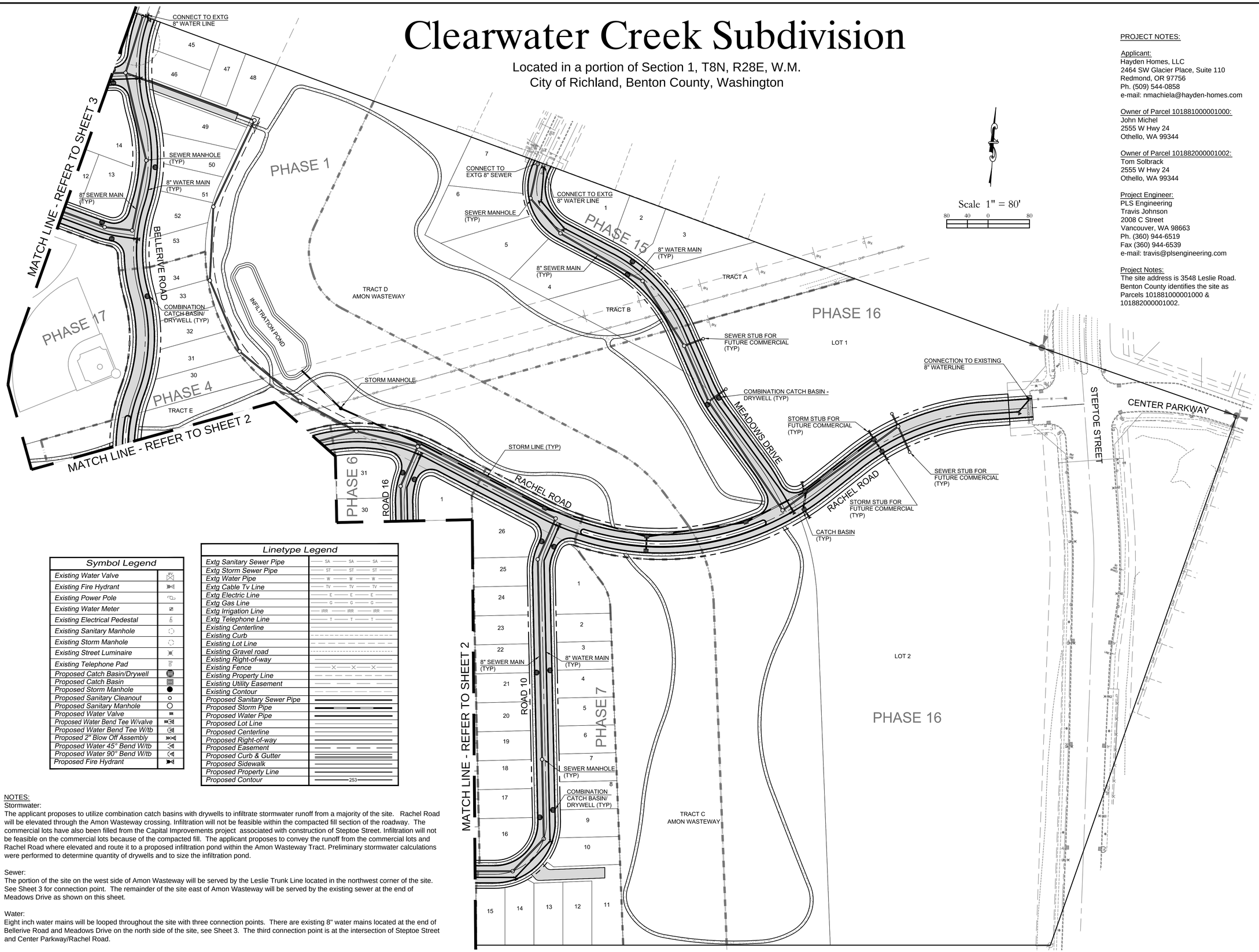

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2464 SW Glacier Place, Suite 110
Redmond, OR 97756
Ph. (509) 544-0858
e-mail: nmachiela@hayden-homes.com

Owner of Parcel 101881000001000:
John Michel
2555 W Hwy 24
Othello, WA 99344

Owner of Parcel 101882000001002:
Tom Solbrack
2555 W Hwy 24
Othello, WA 99344

Project Engineer:
PLS Engineering
Travis Johnson
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Proposed Property Line	
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NOTES:
Stormwater:
The applicant proposes to utilize combination catch basins with drywells to infiltrate stormwater runoff from a majority of the site. Rachel Road will be elevated through the Amon Wasteway crossing. Infiltration will not be feasible within the compacted fill section of the roadway. The commercial lots have also been filled from the Capital Improvements project associated with construction of Steptoe Street. Infiltration will not be feasible on the commercial lots because of the compacted fill. The applicant proposes to convey the runoff from the commercial lots and Rachel Road where elevated and route it to a proposed infiltration pond within the Amon Wasteway Tract. Preliminary stormwater calculations were performed to determine quantity of drywells and to size the infiltration pond.

Sewer:
The portion of the site on the west side of Amon Wasteway will be served by the Leslie Trunk Line located in the northwest corner of the site. See Sheet 3 for connection point. The remainder of the site east of Amon Wasteway will be served by the existing sewer at the end of Meadows Drive as shown on this sheet.

Water:
Eight inch water mains will be looped throughout the site with three connection points. There are existing 8" water mains located at the end of Bellerive Road and Meadows Drive on the north side of the site, see Sheet 3. The third connection point is at the intersection of Steptoe Street and Center Parkway/Rachel Road.

PLS ENGINEERING

Preliminary Utility Plan For:
Clearwater Creek Subdivision
A Subdivision Located In Richland, Washington

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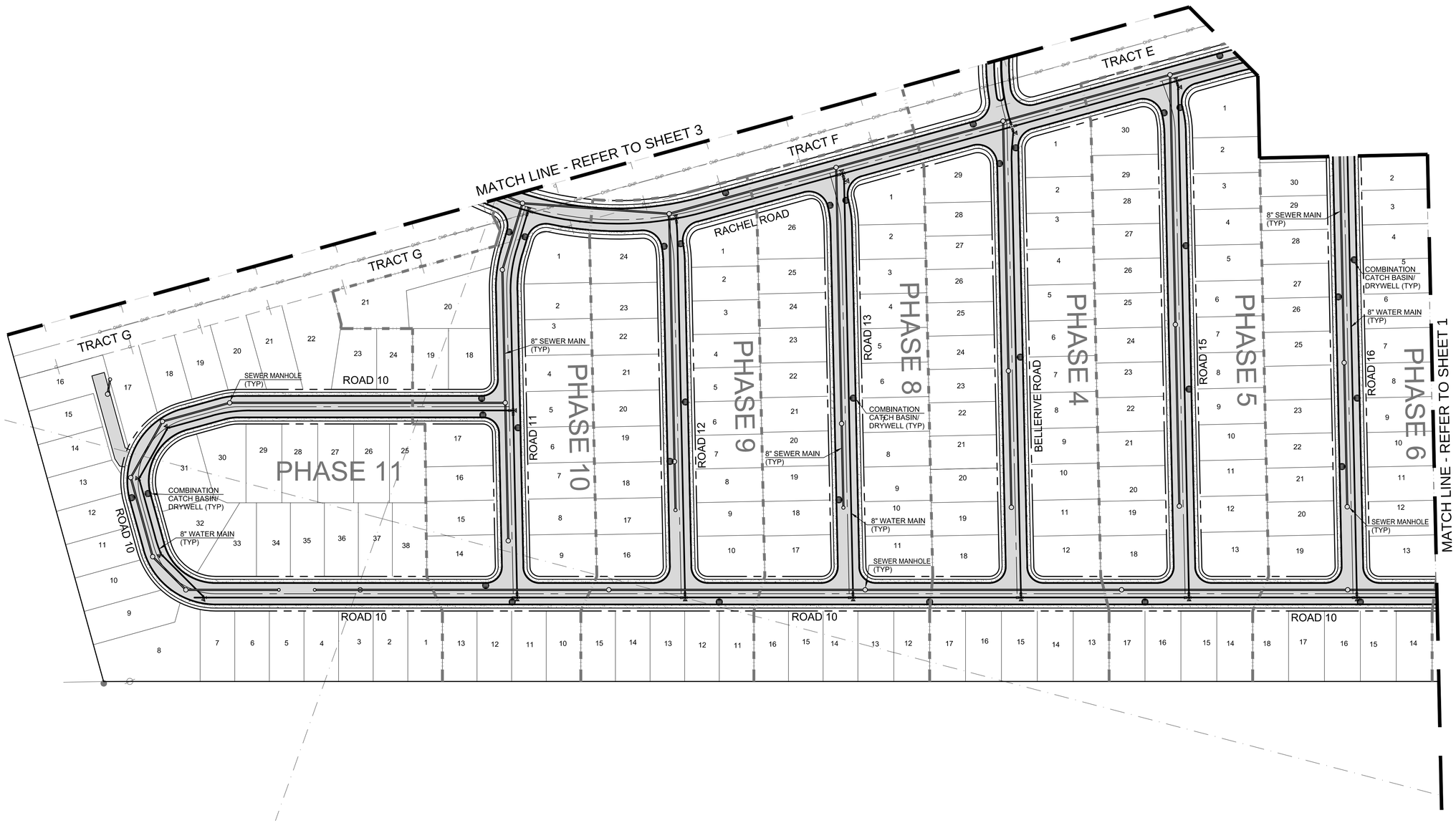

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Preliminary Utility Plan For:

Clearwater Creek Subdivision

A Site Located In Richland, Washington

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PBS | Engineering + Environmental

Biological Resources Report

Proposed Beer Falls Development
3548 Leslie Road
Richland, Washington 99352

November 4, 2013
Project #41244.000

320 N Johnson Street, Suite 700, Kennewick, WA 99336
509.735.2698 Main
866.727.0140 Fax
www.pbsenv.com

Bend | Boise | Coos Bay | Eugene | Portland | Seattle | Tri-Cities | Vancouver

Biological Resources Report

Beer Falls Development
3548 Leslie Road
Richland, Washington 99352

Benton County Parcel Numbers:
101881000001000 and 101882000001002

Prepared for
Hayden Homes, LLC
2464 SW Glacier Place, Suite 110
Redmond, Oregon 97756

Prepared by:
PBS Engineering and Environmental
320 N Johnson St., Suite 100
Kennewick, WA
(509) 735-2698

PBS Project No: 41244.000
November 2013

TABLE OF CONTENTS

FIGURES

SITE PHOTOGRAPHS

1 INTRODUCTION

Hayden Homes, LLC is proposing to develop a 132 acre site in Richland, WA for commercial and residential development with approximately 415 residential lots, 15 acres of commercial development and an elementary school. An initial SEPA Environmental Checklist was submitted to the City of Richland, WA in June 2013. During the public comment period for the SEPA review, the City of Richland received a number of comments and has requested that Hayden Homes submit additional information to address these concerns. One of the studies requested by the City of Richland was a biological resources report. This report is intended to provide additional information on the vegetation and wildlife resources at the site of the proposed development.

2 PROPERTY DESCRIPTION

2.1 Location

The proposed Beer Falls Development is located in the north half of Section 1, Township 8 North, Range 28 East, Willamette Meridian in southeastern Richland, WA approximately two miles south of the confluence of the Yakima River with the Columbia River. The property is bordered on the east by Steptoe Street, on the south by the Northern Pacific Railway, on the west by the Amon Creek Nature Preserve and the Badger Canyon Electrical Substation and on the north by Claybell Community Park. The proposed development includes two Benton County tax parcels (101881000001000 and 101992000001002) Figure 2 is an aerial showing the property boundaries.

2.2 Site Information

The property is in the Amon Creek Basin, just east of Badger Mountain. Amon Creek, which flows north to the confluence of the Yakima and Columbia Rivers receives water from two primary drainages. The west fork of this drainage system is just west of the property and is referred to as West Fork Amon Creek or the East Badger Drain. The eastern drainage passes through the eastern half of the property and is generally referred to as the Amon Wasteway. According to the Kennewick Irrigation District (KID), both the east and west forks are part of the Amon Wasteway and no natural streams occurred in this area prior to the creation of the present irrigation system. The Amon Wasteway only flows during the summer months when the irrigation water is turned on. West Fork Amon Creek is apparently also fed by springs and is less dependent on irrigation return. For the purposes of this report we will refer to the west drainage as WF Amon Creek and the east drainage as Amon Wasteway (Figure 2). The KID has a 400 foot wide easement along the Amon Wasteway through the property. The main channel of the wasteway meanders through the easement and there are several dry gullies and small side channels within this easement that have been created by high flows, particularly on the east side of the wasteway.

The Badger Canyon Substation is located along the southwest boundary of the property and a power line runs diagonally from the substation to the northeast corner of the property. There is a 100 foot wide easement associated with the powerline.

Elevations range from a high of 585 feet near the western border with the substation to lows of 495 feet in the northwest corner near WF Amon Creek and along the northern border where the property crosses the Amon Wasteway. A triangular shaped fill pad along Steptoe Street at the eastern edge of the property drops off steeply to a relatively level area east of the wasteway. To the west of the wasteway the property slopes up towards a high point near the substation. There is a short steep fill

slope from the property up to the railroad tracks to the south. The western portion of the property slopes down towards WF Amon Creek to the west and north, leveling off in the northwest corner.

2.3 Mapped Soils

The soils on the property are mapped as Esquatzel fine sandy loam on either side of the Amon Wasteway, Finley stony fine sandy loam along the Wasteway, and Hezel loamy fine sand, Quincy loamy sand, and Warden very fine sandy loam, eroded on the balance of the property. Much of the central portion of the property that slopes east has small dune features from wind erosion.

2.4 Disturbance History

The property has experienced disturbance associated with the railroad tracks, construction and maintenance of the irrigation return system and access roads, construction and maintenance of the substation and powerlines, and surrounding development. Given the location, it is highly likely that the area has a past history of livestock grazing and possibly some other agricultural uses as well. Several dirt roads and numerous trails cross the property, which is popular with pedestrians, dog walkers, and off-road vehicles, despite signage restricting vehicle access. The ongoing public use has exposed soils to wind and water erosion and allowed colonization of weedy species. Approximately 5 to 6 acres of fill was placed on the eastern portion of the property in 2005 associated with the extension of Steptoe Street through this area.

2.5 Land Use

The two parcels proposed for development are currently undeveloped land. Surrounding land use includes the electrical substation, the Amon Creek Nature Preserve, Claybell Community Park, and residential development. The property is in an area of expanding residential development.

3 METHODOLOGY

PBS has prepared this report based on the following information

- **Site Visit:** Katharine Lee, a Senior Scientist for PBS, conducted a site visit on September 30, 2013. The site visit consisted of walking the property and identifying vegetation communities, plant species, and wildlife sign, as well as making general observations on habitat condition and site disturbance.
- **Wildlife Habitat Evaluation:** Sage Jensen, a wildlife biologist with PBS, provided an analysis of habitat conditions, particularly for the Townsend's Ground Squirrel.
- **WDFW Priority Habitats and Species:** The WDFW on-line habitat and species website was consulted for information on priority habitats and species at or in close proximity to the property.
- **City of Richland:** The City of Richland Municipal Code was reviewed for definitions, buffers and guidance. The City's critical areas map that shows the location of priority habitats was also reviewed.
- **Literature Review:** Information on species identification and habitat requirements was obtained from multiple sources on the internet.
- **Review of SEPA Responses:** PBS reviewed the comments submitted as part of the public SEPA process for the proposed development.
- **Aerial Photographs and Maps:** A number of mapping sources were consulted for historic aerials, topography, soils, fish use, and other information.

- **Consultation with WDFW local biologist:** Mike Ritter, a mitigation specialist with WDFW in the Tri-Cities area was consulted regarding potential priority species use at the property or in the immediate vicinity.

4 VEGETATION COMMUNITIES

There are two primary vegetation communities present on the site. The majority of the site supports a dry sagebrush and grass community that would be considered part of the shrub-steppe vegetation zone. The area bordering the Amon Wasteway has developed a riparian community. The fill area along Steptoe Street has been colonized by mostly weedy species.

4.1 Shrub-Steppe Community

Shrub-steppe is defined as a vegetation community consisting of one or more layers of perennial grass with a discontinuous overstory layer of shrubs. In the Mid-Columbia Region, intact shrub-steppe is dominated by perennial grasses that include bluebunch wheatgrass, Sandberg's bluegrass, Idaho fescue, needle and thread grass, and Thurber's needlegrass. Bi g sagebrush is the dominant shrub with lesser amounts of rabbitbrush, greasewood, hopsage, bitterbrush and buckwheat. One of the defining characteristics of the shrub-steppe community is the presence of a soil surface layer or cryptobiotic crust comprised of blue-green algae, bacteria, fungi, lichens and mosses. Much of the original shrub-steppe in the Tri-Cities area has been converted to agriculture or development. Grazing and other disturbance on the remaining shrub-steppe in the region has resulted in a dramatic reduction in perennial bunchgrasses and native forbs with a corresponding increase in the non-native annual cheatgrass.

The shrub-steppe community on this property has been degraded and altered over years of disturbance. Dominant species currently present include big sagebrush, rabbitbrush, and cheatgrass. Native bunchgrasses have mostly disappeared and native herbaceous species have declined. The cryptobiotic crust has been seriously degraded, though it is still present in a discontinuous patchwork across the site with areas of lesser disturbance still having a reasonably intact soil crust. Wind erosion has exposed large areas of bare sand, particularly along the southern edge. According to the Tapteal Group, The Nature Conservancy conducted a vegetation survey either on the property or in the adjacent preserve and identified the species listed in Table 1. Our field visit was conducted in the fall when much of the herbaceous vegetation had died back so all the species in this list could not be verified. With the exception of the cheatgrass, which has about 80% coverage over the property, most of the species present are native.

In the southern and higher elevation areas on the property, sagebrush is the dominant species and bare sand is common. In the northern portion and lower elevations, rabbitbrush becomes co-dominant, and there is higher overall vegetation cover and more diversity. Photo 2 is indicative of vegetation in the southern portion of the property and Photo 4 shows vegetation in the northern portion of the property.

Table 1. Plant species reportedly identified by The Nature Conservancy in the shrub-steppe community on or adjacent to the subject property. (*from Tapteal SEPA response*)

Scientific Name	Common Name	Native or Introduced	Verified During Field Visit
Achillea millefolium	Common yarrow	N	Yes
Amsinckia sp.	Fiddleneck	N	
Artemisia tridentata	Big sagebrush	N	Yes
Astragalus sclerocarpus	Milk vetch	N	
Balsamorhiza careyana	Carey's balsamroot	N	
Bromus tectorum	Cheatgrass	I	Yes
Comandra umbellate	Bastard toadflax	N	
Cymopterus terebinthinus		N	Yes
Descurainia pinnata	Western tansymustard	N	Yes
Dieteria canescens	Hoary aster	N	
Elymus elymoides	Squirrel tail	N	
Ericameria nauseosa	Gray or rubber rabbitbrush	N	Yes
Ericameria viscidiflorus	Green rabbitbrush	N	Yes
Erodiyum sp.	Stork's bill	I	
Erysimum capitatum	Prairie rocket	N	Yes
Festuca sp.	Fescue	?	
Grayia spinosa	Spiny hopsage	N	Yes
Lomatium sp.	Desert parsley	N	
Poa sandbergii (secunda)	Sandberg's bluegrass	N	
Phlox longifolia	Long-leaf phlox	N	
Poa bulbosa	Bulbous bluegrass	I	
Rumex venosus	Sand dock, winged dock	N	
Sisymbrium altissimum	Tall tumblemustard	I	Yes
Sphaeralcea munroana	Munro's globemallow	N	
Thelypodium sp.	Thelypody	N	

4.2 Amon Wasteway Riparian Corridor

Along the Amon Wasteway, a riparian fringe has developed that varies in width from about 50 feet in places near the southern edge to more than 350 feet at the northern edge of the property. Dominant species present within this riparian zone include Russian olive, reed canary grass, willows, black cottonwood, Siberian elm, and thicket creeper. While the majority of these species are introduced or invasive, the community has a relatively diverse structure. Several large cottonwoods (>30" diameter at breast height) are present. Russian olives and Siberian elm form a discontinuous tree layer. Willows are present along the banks. Vegetation is dense along the channel and becomes sparser with distance. The gradient between riparian and sagebrush grassland is abrupt in some areas and more gradual in others. A number of the Russian olive trees near the southern property boundary have died or appear to be dying back and there are dead trees and shrubs along some of the dry gullies.

Table 2. Partial list of plant species found in the Amon Wasteway riparian community

Scientific Name	Common Name	Native or Introduced
Acroptilon repens	Russian knapweed	I
Apocynum sp	Dogbane or Indian hemp	N
Elaeagnus angustifolia	Russian olive	I
Nepeta cataria	Catnip	I
Parthenocissus vitacea	Thicket creeper	I
Phalaris arundinacea	Reed canary grass	I
Populus balsamifera var trichocarpa	Black cottonwood	N
Salix exigua	Narrow-leaf willow	N
Salix sp	Willows	N
Ulmus pumila	Siberian elm	I

4.3 Priority Plant Species

The Washington Natural Heritage Information System lists 25 rare plants in Benton County. However, the property is not in a land survey section with documented presence of priority plant species. Suitable habitat is not present on the site for the majority of these species. No priority plant species were observed on the property during the site visit, however given the time of year it would be difficult to verify the presence or absence of some of these species.

5 WILDLIFE AND WILDLIFE HABITAT

Because the Beer Falls development property is one of the few remaining undeveloped parcels in the area, it provides habitat for a number of wildlife species. The property provides a connection between the WF Amon Creek and the Amon Wasteway and a habitat connection down to the Yakima and Columbia Rivers through the Main Fork of Amon Creek. According to a study done in 2002, WF Amon Creek has some of the highest scoring depression/stream wetlands in southeast Washington. Because of the springs, there is a near year-round water supply in the WF Amon Creek. Recent restoration activities have improved fish passage through the golf course into the west fork. The Amon Wasteway provides a water source during the dry summer months and the riparian vegetation provides cover and food for a wide variety of species. Herons have used the trees along the wasteway for a rookery in the past. The sagebrush areas are used by a number of birds and small mammals, particularly black-tailed jackrabbits, and these species in turn provide food for predator species such as coyotes, badger, hawks, eagles and owls. Because of the degraded plant communities and the proximity to developed areas, wildlife that use the area tend to be more generalist species and those more tolerant of human activity.

5.1 Priority Species and Habitats

The Washington State Department of Fish & Wildlife (WDFW) shows the following priority species associated with the property or having a potential presence in the area (Table 3). Mapping for some species is only done to the land survey township level, which covers a very broad area. One state threatened species and several federal and state species of concern or candidate species are identified at or near the property. Priority habitats in the vicinity include wetlands and shrub-steppe.

Table 3. Federal and State listed or priority species in the project vicinity as shown on WDFW's Priority Species & Habitats website

Scientific Name	Common Name	Location/Activity	Federal Status	State Status
Athene cunicularia	Burrowing owl	WF Amon Creek / foraging	Concern	Candidate
Buteo regalis	Ferruginous hawk	Breeding area	Concern	Threatened
Urocitellus townsendii	Townsend's ground squirrel	Regular concentration	Concern	Candidate
Lepus californicus	Black-tailed jackrabbit	In vicinity	N/A	Candidate
Oncorhynchus tshawytscha	Chinook salmon	WF Amon Creek & Wasteway occurrence/migration	N/A	N/A
Oncoryhnchus kisutch	Coho salmon	WF Amon Creek & Wasteway occurrence/migration	N/A	N/A

5.1.1 Ferruginous Hawk

The Ferruginous Hawk is the only state threatened or endangered wildlife species with a potential presence in the project area. WDFW shows potential breeding habitat for the Ferruginous Hawk in the general area (township level). Ferruginous hawks like wide open undisturbed landscapes and are not very tolerant of urban or suburban development. PBS contacted Mike Ritter of WDFW to determine whether the site was likely to be used by the hawks as a breeding area. He did not think the hawks would nest at this location because it was too near development. However, the site could still be used for hunting. Primary prey species for the Ferruginous hawk include jackrabbits, ground squirrels and gophers, and the site has a large population of black-tailed jackrabbits. Ferruginous hawks are known to travel five or ten miles in search of prey.

5.1.2 Townsend's Ground Squirrel

The Townsend's ground squirrel (Fed Species of Concern, WA State Candidate species) is a small burrowing ground squirrel found only in Washington State in the Columbia Basin west of the Columbia River in Klickitat, Benton, Yakima, and Kittitas counties. This species typically inhabits low elevation shrub-steppe, native grasslands, pastures, orchards, vineyards, highway margins, vacant lots, and banks of irrigation canals (WDFW 2013). Their diet is largely composed of green vegetation, with Sandberg's bluegrass (Poa secunda), western tansymustard (Descurainia pinnata), lupine (Lupinus laxiflorus) and woollypod milkvetch (Astragalus purshii) occurring most frequently in the diet. Reasons for species decline includes habitat fragmentation, past and current pest control programs (poisoning and shooting) where the squirrel may be an intended or unintended target, and reduction of food sources due to habitat conversion. Habitat disturbance typically reduces forb diversity of arid landscapes, converting sites to shrub-steppe with cheatgrass and other non-native forb dominance. Cheatgrass tends to outcompete native forbs and is not a reliable food source for small wildlife such as ground squirrels.

WDFW Priority Habitats and Species (PHS) data indicates that the Townsend's ground squirrel is documented to occur within the vicinity at the Township level, though no surveys have been conducted on the proposed project site for presence/absence verification. There is potential that the Townsend's ground squirrel may be present within the project area. The proposed project site is within the known range of this species and the vegetation is suitable to marginally suitable to support this species. While ground disturbance may have reduced or eradicated this species from the site, it is still possible that a remnant population exists. Food sources may be limited due to the dominance of cheatgrass over much of the site, and population size may be lower due to limitations for dispersal to adjacent suitable habitats and populations. If present, opportunities for

dispersal are limited due to surrounding land use development and fragmented suitable habitat within range. However, the presence of larger mammals such as coyotes indicates that the area is capable of supporting larger wildlife and prey species.

The proposed project area was likely historically utilized by the Townsend's ground squirrel and may still support a population of this species. Some small mammal burrows were observed along road cut banks but were not abundant throughout the property. The timing of the site visit was such that we would not have been able to observe active Townsend's ground squirrels even if they were present because they go into estivation when plants dry up in the summer. Surveys would need to be conducted in the spring months to confirm presence or absence of this species on the site.

5.1.3 Burrowing Owl

Burrowing Owls (Fed Species of Concern, WA State Candidate species) have been found in locations throughout the Tri-Cities and are known to be in the vicinity of the subject property. WDFW does not show presence on the subject property, but has mapped the Amon Creek Nature Preserve as a potential foraging area for the owls. Burrowing owls appear to be more tolerant of development than some other species so the proximity to developed areas is not likely to be much of a deterrent. The owls prefer open areas with low ground cover and feed off large insects and small mammals such as moles and mice. The burrowing owl will use the burrows of ground squirrels, gophers and other ground dwelling species as well as other natural and man-made cavities for nesting. Few small mammal burrows were observed on the property, so potential burrow sites could be limiting. While no burrowing owls or identifiable burrows were seen during the site visit, a breeding presence on the site could not be entirely ruled out. There is certainly some potential for breeding and even if not breeding on site, the owls could use the site for foraging, though they tend to forage relatively close to their burrows.

5.1.4 Blacktailed jackrabbit

Black-tailed jackrabbits are considered a species of concern by Washington State and are mapped by WDFW elsewhere in the vicinity. A number of black-tailed jack rabbits were observed during the site visit and rabbit droppings were abundant throughout the site. The property provides excellent habitat for the black-tailed jackrabbits because of the abundance of food, cover and water. The jackrabbits feed on sagebrush, rabbitbrush and Russian thistle which are all present and which provide cover as well as food. Bunchgrasses are scarce, but the jackrabbits will also consume cheatgrass. The presence of the Amon Wasteway provides a water supply during the summer months and abundant cover.

5.1.5 Priority Fish Species

WDFW shows Chinook salmon and coho salmon using both WF Amon Creek and the Amon Wasteway. Neither of these species is listed for the mid-Columbia River but salmonids are generally considered priority species. Steelhead trout (federally threatened) are reported in the Main Fork of Amon Creek. Recent fish passage improvements at the Meadow Spring Country Club have improved fish access to the WF Amon Creek and it is possible steelhead utilize this area.

5.2 Other Wildlife Species

Other wildlife species that have been reported in the vicinity of the project area include deer, American badgers (state species of concern), mink, weasels, river otters, beavers, coyotes, eagles, hawks, waterfowl and numerous other birds. Apparently the Lower Columbia Basin Audubon Society tallied

approximately 150 species of birds in the Amon Basin. Other fish species are also likely to be found in both WF Amon Creek and the Amon Wasteway.

6 CITY OF RICHLAND SENSITIVE AREAS

The City of Richland protects Wetlands and Fish and Wildlife Habitat Areas under Chapter 22.10 of the City Municipal Code. Wetlands are rated using the Washington State Wetland Rating System for Eastern Washington. The City defines critical habitat areas as "habitat areas associated with threatened, endangered, sensitive, or priority species of plants or wildlife which, if altered, could reduce the likelihood that the species will maintain and reproduce over the long term". The City does not map the property or the adjoining Amon Creek Nature Preserve as a priority wildlife area on their critical areas maps. Secondary habitat is defined as "areas with one or more of the following attributes: comparatively high wildlife density; high wildlife species richness; significant wildlife breeding habitat; significant wildlife seasonal ranges; significant movement corridors; limited availability; and/or high vulnerability." Secondary habitat is not mapped by the City. The City does not provide special protection for shrub-steppe other than what could be shown to be either critical or secondary wildlife habitat. The definitions of critical and secondary habitat are somewhat subjective and open to interpretation. Ultimately the City makes the determination regarding the classification and protection of habitat areas. I contacted the City of Richland planning department to see if the city had made any determinations of habitat in this area. These determinations are apparently not made by the City and it is up to the applicant to provide evidence of whether an area qualifies under either of the habitat definitions.

6.1.1 Wetlands

There are no jurisdictional wetlands on the subject property. A study performed by Biology Soil & Water Inc. in 2013 determined that there were no jurisdictional wetlands associated with the Amon Wasteway. While there are areas along the Amon Wasteway that meet the biological definition of wetlands, they are not considered jurisdictional because wetland hydrology is dependent entirely on irrigation return flows. Therefore no wetland buffers would apply to the Amon Wasteway.

The wetlands adjacent to WF Amon Creek are jurisdictional wetlands. These wetlands were delineated in 1993 by Shannon & Wilson, with updates to portions of the wetlands conducted in 2002 and 2005 (Shannon & Wilson, 2002 & 2005). At the time of these reports, the wetlands were rated as Category II wetlands. Since that time, the wetland rating system for eastern Washington has been revised. I rated the wetlands based on the original rating, my field review and other available information. The wetlands scored 71 points, which is at the low end of Category 1 wetlands. The City of Richland buffer width for high impact development near Category 1 wetlands is 150 feet.

6.1.2 Critical Habitat Areas

Nothing on the subject property would qualify as critical habitat under the City of Richland definition. The shrub-steppe habitat on the property is disturbed and lacks a strong association with any federal or state threatened or endangered species. It does not meet the City definition of critical habitat.

The WF Amon Creek has very high habitat value because springs provide a constant water source, there is a direct connection downstream to aquatic and wetland habitats at the confluence of the Yakima and Columbia Rivers, and there is a diversity of habitats. However, it does not seem likely that impacts to this area would reduce the likelihood that any priority or listed species will maintain and reproduce over the long term. Therefore we do not believe the WF Amon Creek riparian zone would qualify under the City definition of critical habitat

6.1.3 Secondary Habitat Areas

While the WF Amon Creek riparian zone does not appear to meet the definition of critical habitat, it does meet the definition of secondary habitat. It has comparatively high wildlife density and high wildlife species richness, is part of a significant movement corridor and is of limited availability and high vulnerability. Buffers for secondary habitat would extend 100 feet from the edge of the riparian zone.

The shrub-steppe portion of the Amon Creek Nature Preserve is adjacent to WF Amon Creek, is protected and is shown as priority shrub-steppe habitat on the WDFW priority habitat and species database. However, it is also in a degraded condition and there is no discernible difference between the Amon Creek Nature Preserve shrub-steppe condition and the condition of the shrub-steppe on the subject property. We are assuming that none of the shrub-steppe community would qualify as secondary habitat unless the City determines that even disturbed shrub-steppe is now of limited availability and therefore worth protection. The large population of black-tailed jackrabbits is not in and of itself likely to qualify the shrub-steppe community as secondary habitat.

Despite the high percentage of weedy species and the seasonal irrigation flows, the Amon Wasteway provides habitat for a number of species including passerine birds, waterfowl, raptors, small mammals, badgers, beavers, coyotes and black-tailed jackrabbits. A heron rookery has been present in the old Russian olive trees near where the wasteway enters the property at the south end. The Amon Wasteway riparian area could be considered a secondary habitat area based on comparatively high wildlife density, high wildlife species richness, and significant movement corridors. However, under Section 22.10.180 of the Richland Municipal Code, irrigation and drainage ditches are exempt from fish and wildlife regulations, so no buffers would apply to this area.

7 PROJECT IMPACTS & PROPOSED MITIGATION

As mentioned in the introduction, Hayden Homes, LLC is proposing to develop the two parcels identified above for commercial and residential use with approximately 415 residential lots, a school and 5 acres of commercial development. Access would be provided from Steptoe Street across the Amon Wasteway, from Bellerive Drive and Meadows Drive to the north and from a proposed new City connection across Amon Creek to Rachel Road to the west. The majority of the site would be graded with the exception of most of the 400 foot wide easement for the Amon Wasteway and portions of the 100 foot buffer for the power lines. Some grading will occur for road crossings within both easements and for a stormwater infiltration pond in the KID easement.

Much of the existing sagebrush dominated vegetation will be removed with the exception of those areas within the 400 ft KID easement (~ 8 acres) and additional area within the 100 ft wide powerline easement (~ 5.5 acres). While the habitat value of the original shrub-steppe sagebrush community has been degraded

over the years, this community continues to support a variety of native vegetation and wildlife species and is located adjacent to parks and an open space preserve. Under City of Richland regulations, however, no mitigation would be required for impacts to this community. The proposed configuration concentrates open space along the Wasteway rather than preserving fragmented habitat.

Most of the existing riparian community along the Amon Wasteway will be protected within the 400 foot wide easement, along with some adjacent shrub-steppe vegetation. Wildlife will still be able to use the wasteway easement, and the easement is of sufficient width to provide a wildlife connection down gradient to habitat along the main fork of Amon Creek and through Claybell Community Park to the WF Amon Creek. Informal trails currently exist along much of the wasteway and the proposed development plans call for developing a formal loop trail within the easement. A more formal trail may help focus public use to the trail. Longterm management of the wasteway easement by KID in terms of protection of any potential habitat areas is beyond the control of the property owner or developer.

The proposed development will respect all buffers associated with the wetland/stream complex along the WF Amon Creek. Buffers for Category 1 wetlands are 150 feet. Buffers for secondary habitat areas are 100 feet. The 100 foot habitat buffer for the riparian zone is mostly subsumed by the wetland buffer. Figure 3 shows the approximate location of the critical area buffers with respect to the currently proposed development. The development plans will be revised so that no development occurs within 150 feet of the edge of the wetlands or 100 feet of the riparian community. No stormwater will be discharged within 200 feet of the riparian community. All stormwater from the development will be infiltrated on site. Best management practices will be used during construction to prevent damage to the adjacent Amon Creek Nature Preserve or runoff to any wetlands or protected areas. To provide additional protection of the Amon Creek Nature Preserve, a fence will be installed along the edge of the preserve, with controlled access to the Nature Preserve trails in several locations. Other mitigation measures include shielded lighting and site appropriate landscaping.

Respectfully submitted,

Katharine Lee
Senior Scientist

8 REFERENCES

Animal Diversity Web. 2013 *Spermophilus townsendii* Topwnsend's ground squirrel. Accessed online at: http://animaldiversity.ummz.umich.edu/accounts/Spermophilus_townsendii/

Amon Creek Fish Passage 2. Richland, Washington. Grant proposal for fish passage improvement in Meadow Spring Country Club.

Benton County Assessor's Property Search. 2013. Accessed online at: http://bentonpropertymax.governmaxa.com/propertymax/rover30.asp

Biology Soil & Water. 2013. Critical Areas and Open Space Assessment for the Clearwater Creek Property of Hayden Homes.

Burke Museum, University of Washington Herbarium. 2013. Image Collection, Plants of Washington State. http://biology.burke.washington.edu/herbarium/imagecollection.php

City of Richland GIS maps – Geologic Sensitive Locations. http://www.ci.richland.wa.us/index.aspx?nid=393

City of Richland Municipal Code. 2013. Accessed online at: http://www.codepublishing.com/wa/richland/

Google Earth. 2013.

Kennewick Irrigation District. 2012. Letter to Gwen Clear, Washington Department of Ecololgy from Scott Revell

Kennewick Irrigation District. 2011. Letter to Benton County Commissioners from David McKenzie

Natural Resource Conservation Service (NRCS) 2013 WEBS Online interactive soil survey http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

Northern, Inc. 2013. Report of Phase I Environmental Site Assessment. Proposed residential development property, Clearwater Creek. Richland, WA.

Pacific Northwest National Laboratory. Hanford National Environmental Research Park. Plant Communities. Accessed online at http://nerp.pnnl.gov/veg.asp

Sewall Wetland Consulting, Inc. 2011. Fish and Wildlife Habitat Assessment. West Richland, WA.

Shannon & Wilson. 2002. Preliminary Wetland Delineation Willowbrook 2 Property, Richland, WA.

Shannon & Wilson. 2005. Preliminary Wetland Delineation Willowbrook 2 Property, Richland, WA.

State of Washington. 2011. Management Recommendations for Washington's Priority Habitats: Managing Shrub-steppe in developing landscapes.

Tapteal Greenway 08/19/2013. Response to Hayden Homes SEPA Checklist for Amon Basin Development.

Washington Department of Fish & Wildlife. 2013. Priority Habitat and Species Mapping. http://wdfw.wa.gov/mapping/phs/

Washington Department of Fish & Wildlife. 2004. Management recommendations for Washington's priority species – Volume IV: Birds. http://wdfw.wa.gov/publications/00026/wdfw00026.pdf

Washington Department of Fish and Wildlife. 2013. Threatened and Endangered Wildlife in Washington: 2012 Annual Report. Listing and Recovery Section, Wildlife Program, Washington Department of Fish and Wildlife, Olympia. 251 pp.

Washington National Heritage Information System. 2012. Known High-Quality or Rare Plant Commuynities and Wetland Ecosystems of Washington. Benton County.

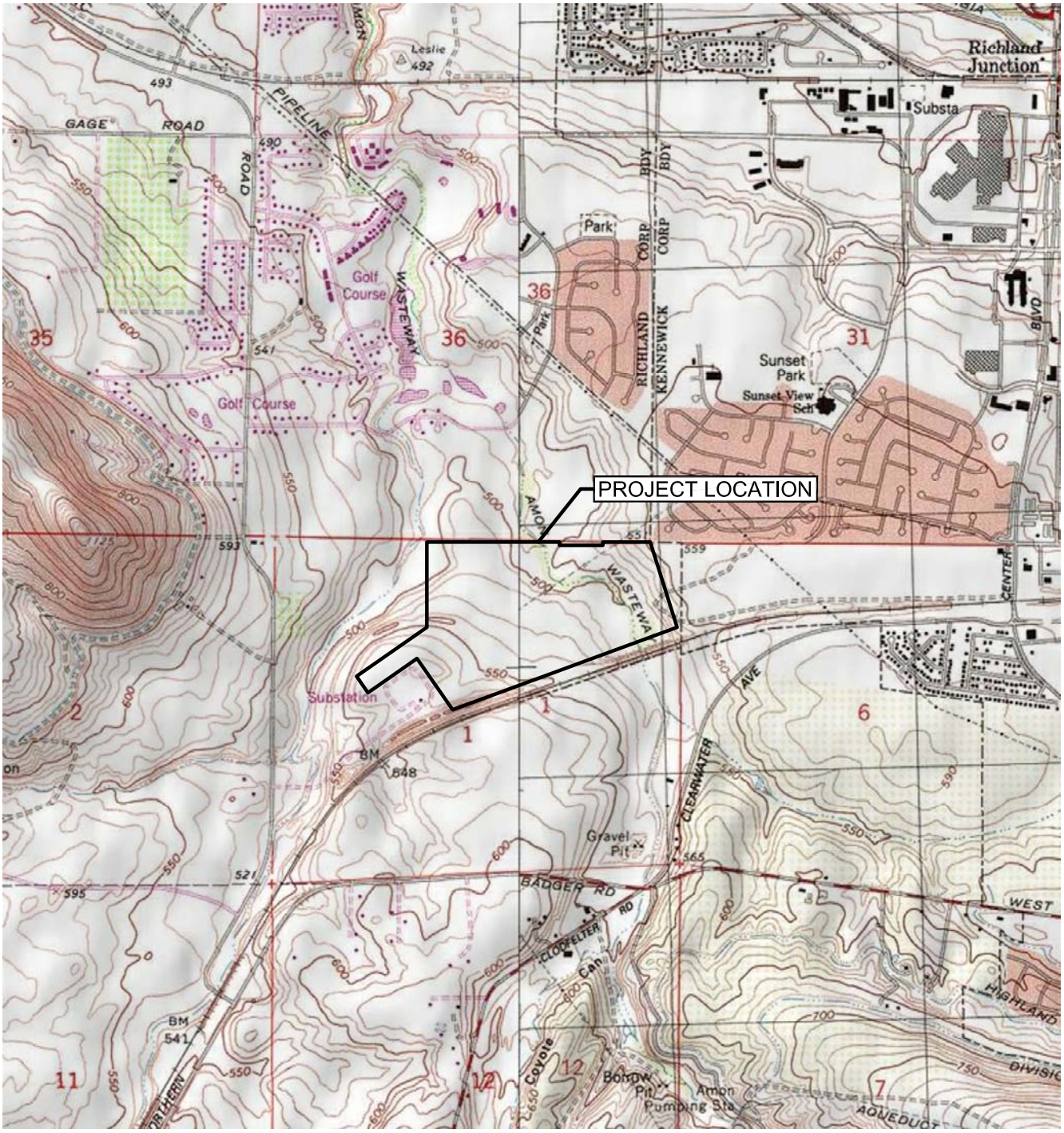
Washington National Heritage Information System. 2013. List of rare plants in Washington. Benton County.

Wikipedia. 2013. Information on species, etc.

US Fish and Wildlife Service. 2013. http://www.fws.gov/endangered/

United State Department of Agriculture (USDA) Plants Database. 2013. http://plants.usda.gov/java/

FIGURES



SOURCE: USGS BADGER MOUNTAIN, WA QUADRANGLE 1970, PHOTO REVISED 1978.

WASHINGTON

0' 1000' 2000' 4000'

SCALE: 1" = 2,000'

PREPARED FOR: HAYDEN HOMES, INC.

PBS

PROJECT #	VICINITY MAP	FIGURE
41244.000	3548 LESLIE ROAD RICHLAND, WASHINGTON	1
DATE OCT 2013		

L:\Projects\41000\41244.000 Hayden Homes - Clearwater Creek\DWG\41244.000_Fig1-2.dwg Oct 14, 2013 12:01pm ginal

SOURCE: © 2011 GOOGLE EARTH PRO, © 2012 GOOGLE

LEGEND

PROPOSED EASEMENT
OPEN SPACE

0' 500' 1000' 2000'

SCALE: 1" = 1,000'

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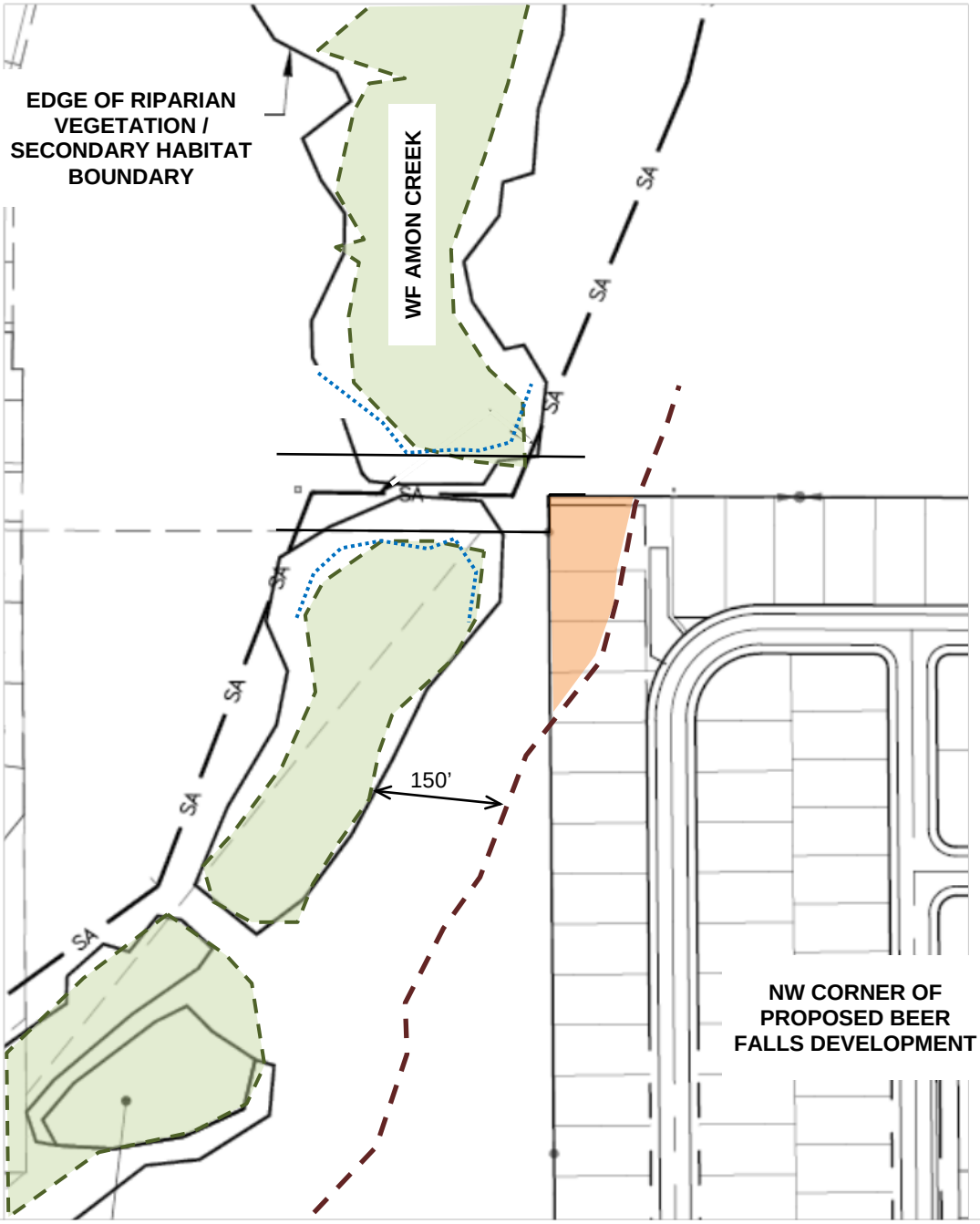
PROJECT # 41244.000

DATE OCT 2013

AERIAL PHOTOGRAPH

3548 LESLIE ROAD
RICHLAND, WASHINGTON

FIGURE 2



KEY:

- Approximate 1993 Shannon & Wilson Wetland Delineation
- Approximate updated 2005 Shannon & Wilson Wetland Delineation near Center Boulevard
- 150 foot Category 1 Wetland, 100' Secondary Habitat Buffer
- Area impacted by critical area buffers

0 100 200 400

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PROJECT # 41244.000

DATE OCT 2013

CRITICAL AREAS AND BUFFERS
PROPOSED BEER FALLS DEVELOPMENT
RICHLAND, WA

FIGURE **3**

SITE PHOTOGRAPHS

Photo 1. View west of Badger Mountain from middle of site showing shrub-steppe dominated by sage brush and cheatgrass.

Photo 2. Southern portion of site with railroad track fill prism along south edge and exposed sand from wind erosion

Photo 3. View northwest of property along western edge with WF Amon Creek in background

Photo 4. Northern portion of site showing higher density of rabbitbrush. Claybell Community Park and Bellerive Drive in background.

Photo 5. Amon Wasteway and riparian corridor showing dominance by weedy species

Photo 6. Closeup of Amon Wasteway showing dense vegetation along banks and complex vegetation structure.


Photo 7. Evidence of beaver near Amon Wasteway


Photo 8. Black-tailed jackrabbit droppings


Photo 9. Dry gully east of Amon Wasteway. Fill prism along Steptoe Street in background


Photo 10. Probable heron rookery nests near southern edge of property near Amon Wasteway


Photo 11. Small mammal burrows along dirt road cut bank within property

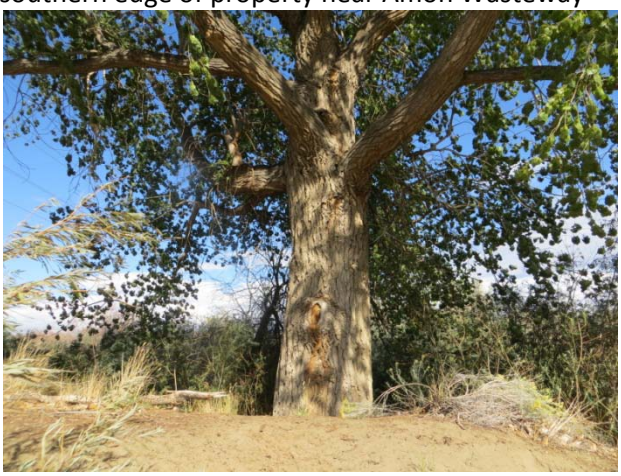
Photo 12. Large cottonwood tree along west side of Amon Wasteway.

Photo 13. Irrigation pond along WF Amon Creek near the northwest corner of the property

Photo 14. View to the southwest of wetlands and ponds along WF Amon Creek taken from western edge of property.

Photo 15. View east from the west side of WF Amon Creek looking across the creek at the shrub-steppe portion of the Amon Creek Preserve, the western edge of the property, and the Badger Canyon Substation.

Photo 16. View southeast from the west side of WF Amon Creek of the wetlands and ponds near Rachel Rd. Hillslope erosion evident in background.

Photo 17. Fill along Steptoe Street.

PBS | Engineering + Environmental

Geologic Hazards Assessment

Proposed Beer Falls Development
3548 Leslie Road
Richland, Washington 99352

November, 2013
Project #41244.000

320 N Johnson Street, Suite 700, Kennewick, WA 99336
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Geologic Hazards Assessment

Beer Falls Development
3548 Leslie Road
Richland, Washington 99352

Benton County Parcel Numbers:
101881000001000 and 101882000001002

Prepared for
Hayden Homes, LLC
2464 SW Glacier Place, Suite 110
Redmond, Oregon 97756

Prepared by:
PBS Engineering and Environmental
320 N Johnson St., Suite 100
Kennewick, WA
(509) 735-2698

PBS Project No: 41244.000
November 2013

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FIGURES

1 INTRODUCTION

Hayden Homes, LLC is proposing to develop a 132 acre site in Richland, Washington for commercial and residential development including approximately 415 residential lots, 15 acres of commercial development and an elementary school. The general site location is shown in Figure 1, Vicinity Map. It is understood that and initial development proposal was submitted by Hayden Homes to the City of Richland, Washington. The City of Richland received a number of comments during the public comment period and has requested additional information including a Geologic Hazard Assessment. This report provides our opinion regarding geological sensitive areas at the site of the proposed development with respect to the requirements of the Richland Municipal Code (Chapter 22.10, Article IV: Geologic Hazard Areas).

Additional to the Geologic Hazard Assessment, it is understood that PBS should comment on the potential for the proposed development to alter groundwater and nearby wetlands conditions.

2 SCOPE OF SERVICES

PBS has prepared this report based on the following scope of services:

- **Geologic Map Review:** Review resources regarding geologic setting, including the City of Richland Geological Sensitive Areas Map. PBS knowledge of local geology and hydrogeology is included as a resource.
- **Site Reconnaissance:** A Washington State Licensed Geologist with PBS completed a site reconnaissance on October 11, 2013. The site reconnaissance consisted of visual observation of surface features while walking the property. No subsurface explorations were completed as part of this work.

3 PROPERTY DESCRIPTION

3.1 Location

The proposed Beer Falls Development is located in the north half of Section 1, Township 8 North, Range 28 East, Willamette Meridian in southeastern Richland, Washington approximately two miles south of the confluence of the Yakima River with the Columbia River. The property is bordered on the east by Steptoe Street, on the south by the existing railroad right of way, on the west by the Amon Creek Nature Preserve and the Badger Canyon Electrical Substation and on the north by Claybell Community Park. The proposed development includes two Benton County tax parcels (101881000001000 and 101992000001002). The approximate property boundaries are shown on the attached Figure 2, Aerial Photograph.

3.2 Site Information

The property is located within the Amon Creek Basin, just east of Badger Mountain. Amon Creek, which flows north to the confluence of the Yakima and Columbia Rivers, receives water from two primary drainages. The west fork of this drainage system is just west of the property and is referred to as West Fork Amon Creek or the East Badger Drain. The eastern drainage passes through the eastern half of the property and is generally referred to as the Amon Wasteway. According to the Kennewick Irrigation District (KID), both the east and west forks are part of the Amon Wasteway and no natural streams existed in this area prior to the creation of the present irrigation system. The Amon Wasteway only flows during the summer months when the surrounding area is being actively irrigated. West Fork

Amon Creek appears to be fed by springs and is less dependent on irrigation return. For the purposes of this report we will refer to the west drainage as WF Amon Creek and the east drainage as Amon Wasteway as indicated in Figure 2. The KID has a 400-foot wide easement along the Amon Wasteway through the property. The main channel of the wasteway meanders through the easement and there are several dry gullies and small side channels within this easement that have been created by high flows, particularly on the east side of the wasteway.

The Badger Canyon Substation is located along the southwest boundary of the property and a power line runs diagonally from the substation to the northeast corner of the property. There is a 100-foot wide easement associated with the powerline.

Elevations range from a high of 585 feet near the western border with the substation to lows of 495 feet in the northwest corner near WF Amon Creek and along the northern border where the property crosses the Amon Wasteway. A triangular shaped fill pad along Steptoe Street at the eastern edge of the property slopes down at roughly 40 percent to a relatively level area east of the wasteway. The property slopes gently up towards a high point near the substation, located west of the site. There is a slope from the property up to the railroad tracks to the south. The western portion of the property slopes down to the west and north towards WF Amon Creek, leveling off near the northwest corner.

Hayden Homes supplied PBS with a Beer Falls development map. The development is roughly divided into quadrants by the Amon Wasteway (trending southeast to northwest) and power lines and associated easement (trending southwest to northeast). The northwest, southwest and northeast quadrants are proposed to be developed with mostly square shaped residential lots and access roads. The southeast quadrant is proposed to be developed commercially. The main access to the development appears to be at the intersection with Steptoe Road.

3.3 Geologic Setting

The subject property is located in the Columbia Basin physiographic region of Washington. This region is a vast plateau which is characterized by regional plateaus, anticline ridges, scoured scablands and incised rivers. The basin is mostly defined by the Miocene Era flood basalts (6 – 16 million years ago), which covered approximately one third of the state.

According to the Geologic Map of Washington – Southeast Quadrant (Washington Division of Geology and Earth Resources, 1997), 1:250,000 scale, the site is underlain by Pleistocene-age unconsolidated outburst flood deposits of lacustrine silt and sand. Outburst floods resulted from the breakup of ice dams and the subsequent draining of Lake Missoula, and other ice margin lakes, during the end of the last ice age. Outwash sediments are typically 5-20 meters in depth. The underlying bedrock is comprised of basalt, which was deposited by widespread flood volcanism during the Miocene.

The soils on the property are mapped as *Esquatzel fine sandy loam* on either side of the Amon Wasteway, *Finley stony fine sandy loam* along the Wasteway, and *Hezel loamy fine sand, Quincy loamy sand* , and *Warden very fine sandy loam, eroded* on the balance of the property. Much of the central portion of the property that slopes east has an uneven topography partially formed from wind erosion.

3.4 City of Richland Geological Sensitive Areas Map

The City of Richland Geological Sensitive Areas Map (August, 2013) identifies the Amon Wasteway as a Flood Plain (Includes Wetlands) and areas adjacent to the east and west of the wasteway as Geologic Hazard Areas (Steep Slopes). Steep slopes are identified as 40 percent or greater (2.5H:1V [horizontal to vertical]) with a change in elevation of 10 feet or more (except where the slopes are composed of rock).

4 SITE RECONNAISSANCE

A Licensed Geologist from PBS completed a site reconnaissance on October 11, 2013. The 130-acre site is mostly undeveloped. Development noted during the site reconnaissance included fill placed near Steptoe Street, culvert and drainage infrastructure associated with the Amon Wasteway, various ATV and footpaths and a set of power lines and towers which trend in a northeast direction across the center of the property. The property has a generally uneven surface topography, slopes gently down at inclinations of approximately 10 to 12 degrees to the northwest, toward Amon Creek, and northeasterly toward the Amon Wasteway.

Steeper slopes (30 to 45 degrees) were noted in several areas on site, and generally correspond to the “steep slopes” sensitive areas identified on the City of Richland map. The eastern portion of the site, adjacent to Steptoe Road, is relatively flat and appears to have been created by the placement of fill. The first “steep slope” is the boundary of the fill area, which slopes down, approximately 30 feet in elevation, to the west, toward the Amon Wasteway. Beyond the site boundary, the slopes along the north side of the railroad track are also mapped as “steep slopes”. PBS noted some basalt boulders which, based on what appeared to be fresh pathways, have recently rolled down the slope. The third area identified to have “steep slopes” is related to a topographic high feature in the western portion of the southern boundary. The slope located here trends laterally along the southern border of the property, and slopes down to the north. ATV paths were observed on the slope and appear to form a preferred route for rainfall runoff. Small erosional gullies were observed.

Aside from few basalt boulders that have rolled down the slope and erosional features, we observed no evidence of recent slope instability, such as scarps, slumps, toe bulges, etc. on the subject property.

Exposed soil at the site consists of loose, light brown, fine- to medium-grained sand.

5 DISCUSSION: GROUNDWATER AND FLOOD PLAIN

The proposed development will likely result in increased irrigation at the site. Also, although precipitation is not expected to increase, stormwater may be managed and released to the subsurface at fewer locations and in greater volumes than currently occurs naturally. Due to the increased irrigation, an overall increase in the infiltration of water from the surface down to the groundwater table is expected at the site. Localized “mounding” of the groundwater table can occur in areas where infiltration rates increase. The extent of this is highly dependent on the volume of increased infiltration, areal extent over which it is infiltrated, permeability of site soils, depth to groundwater and the hydraulic conductivity of the aquifer.

Based on knowledge of the area and the surface elevation, the regional aquifer is not expected to be present within depths on the order of 60 feet below the existing ground surface. If precipitation and irrigation water migrate unimpeded to the regional aquifer, the effect of the development on the aquifer conditions is expected to be insignificant. However, a perched aquifer could form if zones of less permeable material are present within the subsurface, particularly in the summer time when irrigation volume is the

highest. Depending on the depth to the perched aquifer, should one exist, it could have a measurable effect on down-gradient property and/or surface water, including wetlands.

6 PROPOSED SITE GRADING

PBS reviewed the preliminary grading plans prepared by PLS Engineering and dated October 24, 2013. In general, finished grades appear to nearly match existing grades with cuts and fills on the order of about 2 feet. Larger cuts, on the order of approximately 12 feet and fills on the order of about 12 feet are planned for localized areas of the site to provide generally flat lots. Planned grading of Rachel Road includes both cut and fill at the identified and mapped "steep slopes" area on the eastern portion of the site. Additional, grading along the toe of the slope up to the railroad will include minor cuts and fills of approximately 2 feet.

7 CONCLUSIONS AND RECOMENDATIONS

With regard to the Geologic Hazards Assessment conducted on site, PBS makes the following conclusions and preliminary recommendations:

- The site was generally noted to have a mildly sloping (10 to12 degrees), uneven surface. Site soils are generally loose, light brown fine- to medium-grained sand;

- Three areas were identified to have "steeper slopes" (30 to 40 degrees), as shown on Figure 2: Site Plan;

- Based on observations during our site reconnaissance, there is a risk of rocks rolling down onto the southern lots from the southern slope.

- During our limited reconnaissance, no features were identified that would indicate recent instability of site slopes with the exception of toppling boulders. Development outside the area where steep slopes are mapped or were identified, in our current opinion is geotechnically feasible. We recommend a geotechnical report be prepared to evaluate the impacts of site grading and to develop recommendations related to the proposed development plans.

- Currently proposed grading will impact the "steep slopes" at the site: Rachel Road on the eastern portion of the site and along the toe of the southern slope. In order to evaluate the impact of site grading on these slopes in these areas we recommend completing a geotechnical assessment that includes site-specific explorations to address the following:
    - Site grading: site stripping, cut and fill slope inclinations
    - Fill material suitability and placement/compaction
    - Pavement, slab, and foundation subgrade preparation
    - Slope stability where site grading will impact existing "steep slopes"

8 LIMITATIONS

Our conclusions are based upon limited observations during a site reconnaissance on the date mentioned above. No subsurface explorations have been completed to verify soil, bedrock, and groundwater conditions at the site. Variations in these slope components can have a substantial affect on the long-term stability of slopes. Off-site changes due to excavation, construction, or placement of fills can also impact long term slope stability. We should be contacted to review any site changes to evaluate their possible affect on the

subject property. Therefore, this report should not be relied upon after two years from its issue, or in the event that the site conditions change.

9 CLOSING

PBS respectfully submits this Geologic Hazards Assessment. We appreciate the opportunity to provide our services to your project. If you have additional concerns, please do not hesitate to contact me at 509.735.2698.

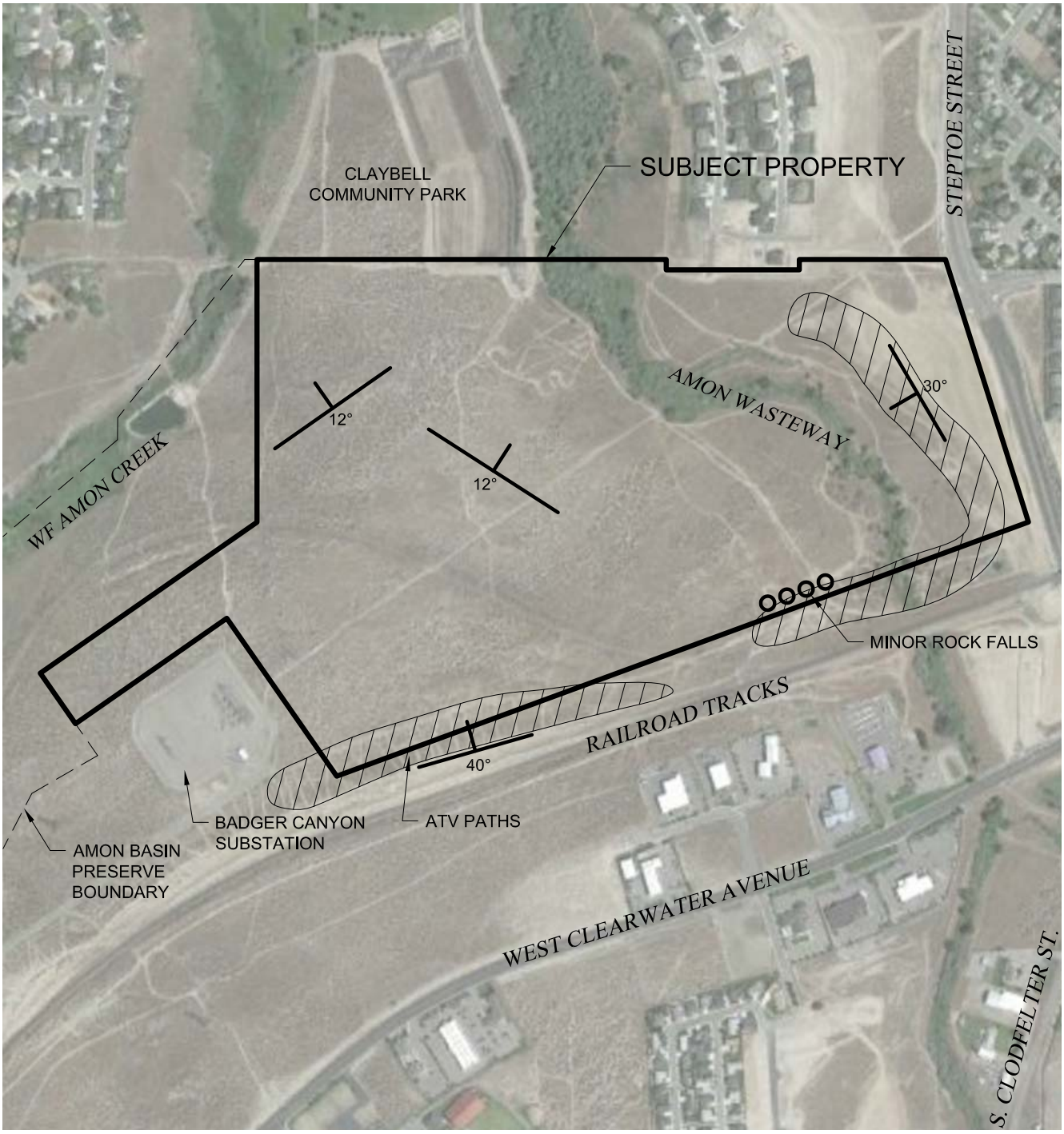
Sincerely,
PBS Engineering and Environmental, Inc.

November 7, 2013

Ken Nogeire, LHG
PBS Senior Geologist

Date

FIGURES



SOURCE: © 2011 GOOGLE EARTH PRO, © 2012 GOOGLE

LEGEND

40° SLOPE

GEOLOGICAL SENSITIVE AREAS: STEEP SLOPES

0' 325' 650' 1300'

SCALE: 1" = 650'

PREPARED FOR: HAYDEN HOMES, INC.

PBS

PROJECT #	SITE PLAN	FIGURE
41244.000	3548 LESLIE ROAD RICHLAND, WASHINGTON	2
DATE OCT 2013		

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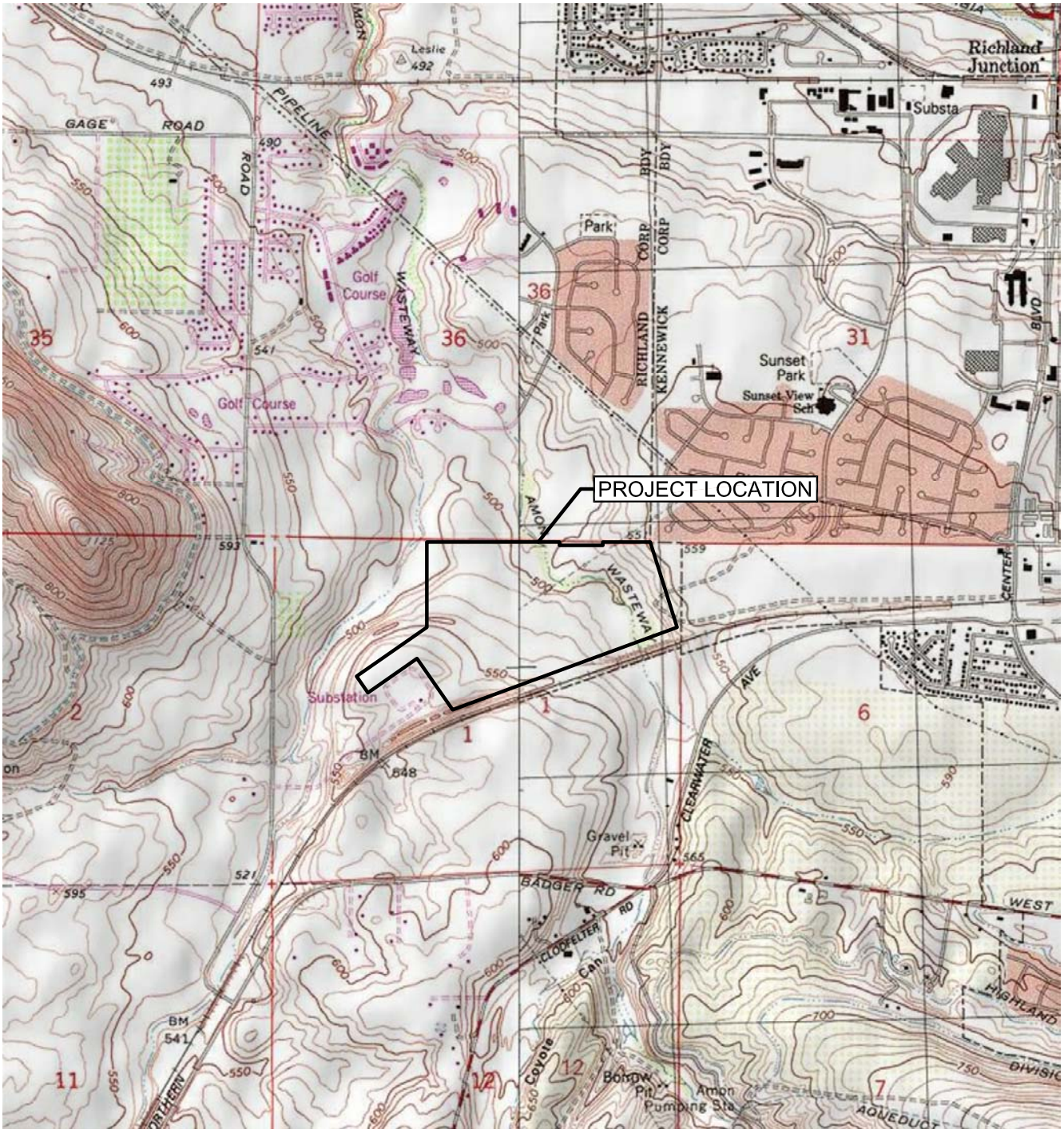

SOURCE: USGS BADGER MOUNTAIN, WA QUADRANGLE 1970, PHOTO REVISED 1978.

WASHINGTON

0' 1000' 2000' 4000'

SCALE: 1" = 2,000'

PREPARED FOR: HAYDEN HOMES, INC.

PBS

PROJECT #	VICINITY MAP	FIGURE
41244.000	3548 LESLIE ROAD RICHLAND, WASHINGTON	1
DATE OCT 2013		

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Northern, Inc.

Consulting Engineers Environmental Scientists Geologists
Construction Materials Testing Geophysical Services

GEOTECHNICAL SITE INVESTIGATION/ GEOLOGIC HAZARDS ASSESSMENT & CRITICAL AREAS REPORT

CLEARWATER CREEK RESIDENTIAL DEVELOPMENT
3548 LESLIE ROAD
RICHLAND, WASHINGTON

GNN PROJECT NO. 213-416

NOVEMBER 2013

Prepared for
HAYDEN HOMES
2464 SW GLACIER PLACE, SUITE 110
REDMOND, OREGON 97756

Prepared by
GN NORTHERN, INC.
CONSULTING GEOTECHNICAL ENGINEERS
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(509) 248-9798

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November 18, 2013

Hayden Homes
2464 SW Glacier Place, Suite 110
Redmond, OR 97756

Attn: Nathan Machiela, Land Development Manager

Subject: Geotechnical Site Investigation / Geologic Hazards Assessment and Critical Areas Report
Clearwater Creek Residential Subdivision
Richland, Washington

GNN Project No. 213-416

Mr. Machiela:

At your request, we have completed a geotechnical site investigation and geologic hazards assessment / critical areas report for the proposed residential subdivision portion of the project identified as Clearwater Creek, located east of Leslie Road and north of the railroad tracks in the City of Richland, Washington.

Based on the findings of our subsurface study, we conclude the proposed site is suitable for the intended development provided that our geotechnical recommendations presented in this report are followed during the design and construction phases of the project.

This report describes in detail the results of our investigation, summarizes our findings, and presents our recommendations. It is important that we provide consultation during the design and field testing services during construction to review and monitor the implementation of the geotechnical recommendations.

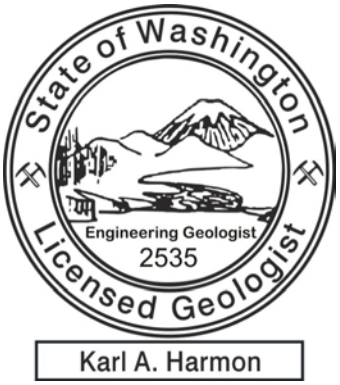
If you have any questions regarding this report, please contact us at 509-248-9798.

Respectfully submitted,

GN Northern, Inc.

Yousuf Memon, EIT
Staff Engineer

Karl A. Harmon, L.E.G., P.E
Senior Geologist/Engineer



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APPENDICES

EXECUTIVE SUMMARY

GN Northern has prepared this executive summary to provide a general overview of the geotechnical site investigation and geologic hazards assessment / critical areas report for the proposed residential subdivision portion of the project identified as Clearwater Creek. The report itself should be relied upon for information about the findings, conclusions, recommendations, and other concerns.

The proposed Clearwater Creek residential development project is located within the Amon Basin situated north of Clearwater Avenue between Leslie Road to the west and Steptoe Street to the east in the City of Richland, Benton County, Washington. The proposed project will be developed in phases and will ultimately include a total of approximately 460 individual lots for single-family homes with associated roadways and utility infrastructure.

A review of selected information pertaining to the site and surrounding areas was performed that included published technical literature, published geologic maps, and available aerial photographs. The review was performed to identify common geotechnical and geologic conditions in the project region, including general and site-specific soil and bedrock conditions, groundwater, slopes, drainage, erosion, and geologic hazards. Portions of the site are currently mapped on the City of Richland Geological Sensitive Areas Map (dated August 2013). Project

The project site currently consists of approximately 96-acres of undeveloped rolling hillside terrain covered with a moderate growth of native vegetation including grasses and sage brush. Surface soils are generally considered to be moderately to highly erodible. Development on sloping ground poses an inherent risk related to global and local stability of the slopes. Based on our geotechnical site evaluation, the existing site slope conditions are considered stable. Appropriate site grading operations including proper design and construction of drainage and erosion control measures as recommended within this report will be required to maintain appropriate safety factors for project slopes.

The proposed project may be constructed as planned, provided that the recommendations in this report are incorporated in the final design and construction. Site development will include clearing and grubbing of vegetation, site grading, building lot development, underground utility installation,

and construction of residential roadways and other related infrastructure. Remedial site grading is recommended to develop stable cut and fill slopes and provide uniform support for proposed residential structures, roadways and infrastructure improvements.

The findings and recommendations in this report address the mass-grading operations necessary to develop the planned residential subdivision. Our recommendations relate to grading operations for site cuts and fills, construction of residential roadways and infrastructure, proper site slope construction, and preliminary development of residential building lots.

Due to the significant size of the project site and proposed phasing of development, some secondary level geotechnical evaluation, may be warranted following the mass grading and prior to construction of residential structures on a per-case basis based on the specifics of future proposed development such as grade change, fill placement, partial cut & partial fill grade, cuts greater than 4 feet, retaining structures, rockery walls, daylight basement, swimming pool, tiered lot configuration, etc. The Geotechnical Engineer of Record (GN Northern, Inc.) should review future project plans to confirm that the earthwork and foundation recommendations of this report may be properly interpreted and implemented in the design and specifications and determine if any supplemental geotechnical work is necessary.

PURPOSE AND SCOPE OF SERVICES

This geotechnical/geologic report has been prepared for the proposed residential subdivision portion of the development generally located east of Leslie Road and north of the railroad tracks in the City of Richland, Washington; the site location is shown on the Vicinity Map (Figure 1, Appendix I). Our investigation was conducted over the ~96-acre site to collect information regarding subsurface conditions and present recommendations for suitability of the subsurface materials and allowable bearing capacity for the proposed new development.

Our study was conducted in accordance with our understanding of the project based on conversations and emails between our office and Mr. Nathan Machiela, Land Development Manager with Hayden Homes; notice to proceed was provided by Mr. Machiela via email in the form of an authorized “Proposal for Geotechnical Soils Report”.

A Preliminary Plat of the development prepared by PLS Engineering was provided for our use by Mr. Machiela. Field exploration consisting of fifty (50) test pits was completed from September 17 through September 27, 2013. Exploratory test pit locations can be seen in the Exploration Map (Figure 2, Appendix I). Results of the field exploration and laboratory testing results were analyzed to develop recommendations for foundation bearing capacity and construction. Detailed test pit logs are presented in Appendix II, following this report. Results of our laboratory testing are presented in Appendix III, following this report.

This report has been prepared to summarize the data obtained during this study and to present our conclusions and recommendations based on the proposed construction and the subsurface conditions encountered at the site. Design parameters and a discussion of the geotechnical engineering considerations related to construction are included in this report.

PROPOSED CONSTRUCTION

Based on the information provided, we understand the proposed Clearwater Creek development will consist of an approximately 96-acre residential subdivision located within the Amon Basin situated north of Clearwater Avenue and the railroad tracks between Leslie Road to the west and Steptoe Street to the east in the City of Richland, Benton County, Washington. It is understood that construction will consist of up to 460 single-family homes on individual lots spread throughout the development. Although final structural details have yet to be finalized, it is assumed that houses will consist of one- to two-story, wood-frame homes founded on shallow spread footings.

Although loading criteria for the future proposed residential structures were not provided to us at the time of this report, based on our work with similar projects, we assume that structures will be founded on shallow spread type foundations. Additionally, we expect wall loads to be on the order of 2,500 plf and maximum column loads to be on the order of 30 kips. If loading conditions are greater than those described please contact our office for potential re-analysis. Settlement tolerances for the structures are assumed to be limited to 1 inch, with differential settlement limited to ½ inch.

FIELD EXPLORATION

Our field exploration was conducted between September 17 and September 27, 2013. A utility clearance was obtained prior to the field exploration. Fifty (50) test-pits and thirteen (13) infiltration tests were completed at the site and were logged by our field engineer. The test pits extended to depths of approximately 5 to 12 feet below the existing ground surface (BGS) and were excavated using a CAT 420E Extendahoe Backhoe provided by Chinook Wind Construction of Yakima, Washington.

The soils observed during our field exploration were classified according to the Unified Soil Classification System (USCS), utilizing the field classification procedures as outlined in ASTM D2488. A copy of the USCS Classification Chart is also included in Appendix II. Several photographs of the site are presented in Appendix III following this report.

Depths referred to in this report are relative to the existing ground surface elevation at the time of our field investigation. The surface and subsurface conditions described in this report are as observed at the site at the time of our field investigation.

LABORATORY TESTING

Representative samples obtained in the field during our exploration from the test-pits were selected for testing to determine the engineering and physical properties of the soils in general accordance with USCS (ASTM D2488). Laboratory tests performed are shown in the following table:

Test	To determine
Particle Size Distribution (ASTM D422)	Soil classification based on proportion of sand, silt, and clay-sized particles
Natural Moisture Content (ASTM D2216)	Soil moisture content indicative of in-situ condition at the time samples were taken

Results of laboratory tests are included on the final test-pit logs and are also presented in tabular and graphic form in Appendix IV attached to the end of the report.

SITE CONDITIONS

The proposed Clearwater Creek residential development project is located within the Amon Basin situated north of Clearwater Avenue between Leslie Road to the west and Steptoe Street to the east in the City of Richland, Benton County, Washington. The proposed residential subdivision development includes two irregular-shaped project areas separated by the Amon Wasteway (east fork). The site is located in Section 1, Township 8 North and Range 28 East of the Willamette Meridian, Benton County, Washington. Appendix I includes several figures depicting the project site, vicinity and various site features and constraints.

The smaller portion is approximately 2.5-acres in size and situated northeast of the Amon Wasteway and northwest of the BPA power-line easement. This portion of the development will join with the existing residential subdivision (The Heights at Meadow Springs) at the southern terminus of Meadows Drive Road. Planned development of this portion of the property currently includes approximately seven residential lots.

The larger portion of the project site consists of approximately 94-acres situated between the west and east forks of Amon Creek/Wasteway, north of the railroad tracks and south of Claybell Park. An existing BPA substation is located near the southwest portion of the project site and includes an overhead power transmission line (with associated easement) extending across the site toward the northeast. Planned development within this portion of the site will include approximately 453 individual residential lots for single-family homes.

Surface conditions across the project site are typified by gently rolling and hummocky hillside terrain covered with a moderate growth of native vegetation including various grasses and sage brush. Average native slope conditions within the areas proposed for development and outside of the Amon Creek/Wasteway 400-foot wide easement were measured to range near level to maximum gradients of approximately 10 to 15%. A man-made artificial-fill berm associated with historic development of the re-routed railroad tracks along the southern portion of the site include maximum slope gradients measured to be approximately 25 to 30%.

SUBSURFACE CONDITIONS

Subsurface soil conditions were generally consistent across the main portion of the site west of the Amon Wasteway, with soils typically classified as Sandy Silt (ML) and Silty Sand (SM). Approximately 2 to 4 inches of organic-rich topsoil was typically observed across the surface. The onsite soils were generally observed to consist of loose to medium dense, dry to moist, interbedded fine grained sandy silts and silty sands. Occasional thin layers and lenses of apparent volcanic ash material were observed at various depths within a number of the test-pits. A deeper layer of poorly graded gravel with silt and sand was noted at a depth of approximately 9 feet within Test-pit TP-3 near the north-central portion of the site. The soils encountered in Test-pit TP-50, isolated from the main portion of the project site northeast of the Amon Wasteway, consisted of relatively clean sands (SP-SM). Detailed logs of each of our test pits are presented in Appendix II following this report. Photographs taken at selected test pit locations are presented in Appendix III.

The soil survey map of the vicinity prepared by the Natural Resources Conservation Service (NRCS) indicates mapped soils at the project site include Hezel loamy fine sand, Quincy loamy sand, and Warden very fine sandy loam, situated on slopes ranging from 2 to 15%. The typical soil profiles are described to include an upper layer (< 18inch) of loamy fine sand to loamy sand or sandy loam over stratified fine to very fine sandy loam to silt loam. The drainage class for these soils generally range from somewhat excessively drained to excessively drained with the capacity of the most limiting layer to transmit water (Ksat) ranging from moderately high (0.20 to 0.57 in/hr) and high to very high (5.95 to 19.98 in/hr). The landform settings are identified as terraces and parent materials are described as eolian (wind blown) sands over silty lacustrian deposits. Refer to the Soil Survey Map in the Appendix VII for more details.

Groundwater

Groundwater was not encountered within any of the test pits excavated during our field exploration at the project site. Depths to groundwater are expected to fluctuate slightly with changes in local draws and precipitation in the area. Based on available well log data from the Washington State Department of Ecology within the area, groundwater is anticipated at depths of approximately 60 to 90 feet below existing grade with shallower depths anticipated in the vicinity of each of the Amon Creek forks. Groundwater conditions beneath the site are not expected impact construction of the

proposed development. Well logs from the surrounding areas are presented in Appendix VI, following this report.

GEOLOGIC CONDITIONS

Regional Geology

The City of Richland lies on the Columbia Plateau, a broad plain situated between the Cascade Range to the west and the Rocky Mountains to the east. The Columbia Plateau was formed by a thick sequence of Miocene Age tholeiitic basalt flows, known as the Columbia River Basalt Group (CRBG), which erupted from fissures in north-central and northeastern Oregon, eastern Washington, and Western Idaho approximately 12 to 26 million years ago. The Columbia Plateau is often called the Columbia Basin because it forms a broad lowland surrounded by mountains. The Columbia River Basalt Group is underlain by continental sedimentary rocks from early in the Tertiary Period. Sediments of the Pliocene Age Ringold formation overlie the Columbia basalts. The Ringold Formation sediments consist of a heterogeneous mix of variably cemented and compacted gravel, sand, silt, and clay deposited by the ancestral Columbia, Snake, and Yakima Rivers.

The project site is located within the Amon Basin near the outlet of Badger Canyon, which was the ancestral route of the Yakima River. The east and west forks of Amon Creek are now a tributary of the Yakima River. The site is situated near base of the Horse Heaven Hills and in line with the Rattlesnake Hills of the Yakima Fold Belt within the Columbia Basin physiographic province of southeastern Washington. The Rattlesnake and Horse Heaven Hills consist of east-west trending anticline ridges of the Yakima Fold Belt formed by north–south compression in the regional lava flows.

Near the end of the Pleistocene, the Columbia Basin was subjected to a series of massive, high energy floods known as the Missoula Floods. During this time, a lobe of the Cordilleran ice sheet extended south into Idaho, damming up the Clark Fork River and creating Glacial Lake Missoula, impounding as much as 500 cubic miles of water. These ice dams periodically failed and then reformed numerous times during this period, catastrophically draining the lake and unleashing a series of massive torrents of water that significantly scoured and altered landscapes in the Columbia

Basin through erosion and deposition. Sediments from these glacial outburst flooding events filled the area including Badger Canyon resulting in the re-routing of the Yakima River near Benton City.

Local Geology

In the Tri-Cities area the uppermost layers of the CRBG are fractured bedrock of the Wanapum Basalt formation. Regionally, the top surface of the Wanapum Basalt is known to slope to the northeast toward the Columbia River, although local variations exist. Bedrock beneath the project site was not encountered within any of our explorations conducted at the site. A review of available water well logs in the area generally indicates that bedrock exists at depths greater than 70 feet. Overlying sediments in the project area include surficial deposits of Plio-Pleistocene loess (aeolian-windblown deposits), including silt and fine-grained sands, along with localized areas of Quaternary alluvium and Pleistocene-age outburst flood deposits, commonly identified as the Missoula Flood Deposits.

Geologic Hazards

Geologic hazards that may affect the development include seismic hazards (ground shaking, surface fault rupture, soil liquefaction, and other secondary earthquake-related hazards), slope instability, flooding, ground subsidence, and erosion. A discussion follows on the specific hazards to this site.

Regional Faulting: There are three main fault structures in the area around the site, consisting of the Rattlesnake fault structure, the Horse Heaven Hills structure, and the Wallula Fault system. These three structures are included in many of the regional lineaments in the area including the Olympic Wallowa Lineamant (OWL), the Cle Elum-Wallula deformed zone (CLEW), and the Rattlesnake-Wallula trend (RAW).

The Horse Heaven Hills structure is one of the longest fold and fault systems in south-central Washington, and is part of the Yakima fold belt. No definitive evidence has been documented to show Quaternary movement in the Horse Heaven Hills.

The Rattlesnake fault structures are anticlinal segments cut and underlain by south- to southwest-dipping thrust or reverse faults in rocks of the Miocene Columbia River Basalt Group. These anticlinal segments characterize the southeastern part of the Rattlesnake Hills uplift and are en-

echelon double-plunging anticline. For much of their length, the faults of the Rattlesnake structures are covered by loess, landslide, and glacial outburst flood deposits of Quaternary age.

The Wallula Fault System is a prominent northwest-striking fault zone that extends from near Milton-Freewater, Oregon to near Kennewick, Washington. Unlike the two previously described structures, the Wallula Fault System is mostly mapped as linear, steeply dipping strike-slip, normal, or reverse faults in Quaternary surficial deposits and rocks of the Columbia River Basalt Group. The mapped fault pattern, and other evidence, supports a right-lateral strike-slip sense of movement on the Wallula Fault. Although poorly studied, some evidence suggests up to four surface-faulting events within the past 10,000 years along a portion of the Wallula Fault System in northeastern Oregon. Slip rate on all three faults is estimated to be less than 0.2 millimeters per year.

The seismic hazard in the project area and vicinity results from three seismic sources: interplate events, intraslab events, and crustal events (Geomatrix, 1995, 1996). Each of these events has different causes and therefore produces earthquakes with different characteristics (*i.e.*, peak ground accelerations, response spectra, and duration of strong shaking). Each is capable of generating a peak ground acceleration (pga) on rock larger than 0.05g.

Two of the potential seismic sources, interplate and intraslab events, are related to the subduction of the Juan De Fuca plate beneath the North American plate. Interplate events occur due to movement at the interface of these two tectonic plates. Intraslab events originate within the subducting tectonic plate, away from its edges, when built-up stresses within the subducting plate are released. These source mechanisms are referred to as the Cascadia Subduction Zone (CSZ) source mechanism. The CSZ originates off the coast of Oregon and Washington and subducts beneath both states.

Earthquakes caused by movements along crustal faults, generally in the upper 10 to 15 miles, result in the third source mechanism. These movements occur on the crust of the North American tectonic plate when built-up stresses near the surface are released. There are several crustal faults associated with structure in the vicinity of the project, including the Rattlesnake-Wallula Trend, Columbia Hills Anticline, and Horse Heaven Hills NW Fault (Geomatrix 1995, 1996). These faults are generally considered to be inactive or have a low probability of activity.

The most notable regional earthquake event in the past century occurred on July 15, 1936 near Umapine, Oregon, approximately 40 miles to the east-southeast. The Umapine quake has been set at magnitude 5.7 or 6.4 on the Richter Scale by different resources, and was felt through large portions of Washington, Oregon, and Idaho, and caused ground cracking, small areas of soil liquefaction, structural damage, and isolated building collapses near Walla Walla, Washington and Milton-Freewater, Oregon. Damage was also reported in Waitsburg (approximately 50 miles east of the project site), and the quake was felt in Kennewick (estimated Modified Mercalli (MM) Intensity of III) but no damage was reported.

Within the past 10 years there have been a total of 28 earthquakes within a 100-kilometer radius of the site. The largest of these episodes had a magnitude of 3.7 and a hypocenter of 20 kilometers below the surface. It occurred in 2008 and the epicenter was approximately 23 kilometers away from the project site at a location of N 46.17 W -119.55. Of the 28 total earthquakes in the past 10 years, 21 had a focus of 10 kilometers or less, 6 were between 25 kilometers and 11 kilometers, and 1 was greater than 25 kilometers deep (a focus of 36 kilometers below the surface). All 28 events have an average magnitude of 2.9 on the Richter scale.

Surface Fault Rupture: For the purposes of this report, an active fault is defined as a fault that has had displacement within the Holocene epoch or last 11,000 years. While the region is subject to areas of known faulting and deformation related to activity along the Yakima Fold Belts, due to the lack of any known active fault traces in the immediate site vicinity, surface fault rupture is unlikely to occur at the project site. While fault rupture would most likely occur along previously established fault traces, future fault rupture could occur at other locations.

Seismic Conditions: The Tri-Cities area is generally not considered to be located within an area of high seismic activity. As discussed above, there are no confirmed major faults in the Tri-Cities region capable of producing strong earthquakes. Anticipated ground motions in the region due to seismic activity along faults in other parts of the Northwest are relatively low.

The two largest crustal earthquakes felt in the state of Washington included the 1872, M 6.8 quake near Lake Chelan and the 1936, M 6.0 Walla Walla earthquake. The following list provides

information regarding earthquakes within the past 25 years for epicenters within 100 miles of Richland (city center), Washington, listed by magnitude (list courtesy of www.city-data.com):

Date of Event	Magnitude	Distance from Richland (miles)
November 28, 1991	4.3	50.4
July 14, 1992	4.1	50.6
January 30, 2000	4.1	85.2
October 9, 1998	4.0	68.5
August 7, 1992	3.9	32.6
May 18, 2008	3.7	15.0

Spectral response accelerations S_S and S_1 are the short and long period spectral response accelerations used for seismic design expressed in terms of gravity or "*g*". S_S and S_1 are defined as the five percent damped, spectral response acceleration at 0.2-second and 1.0-second periods respectively, having a 2 percent chance of being exceeded in 50 years, referred to as the Maximum Considered Earthquake [MCE]. Probabilistic ground motions for the site were evaluated using the USGS web site.

While accurate earthquake predictions are not possible, various agencies have conducted statistical risk analyses. The United States Geological Survey [USGS] has completed probabilistic seismic hazard maps. We have used these maps in our evaluation of the seismic risk at the site. As per the 2012 International Building Code (IBC), a site class 'D' may be used for seismic design purposes. Site Class 'D' corresponds to stiff soil. The following site specific design values may be used:

Seismic Design Parameter	Value (unit)
S_s	0.421 (g)
S_1	0.162 (g)
F_a	1.463 (unitless)
F_v	2.154 (unitless)
SM_s	0.616 (g)
SM_1	0.349 (g)
SD_s	0.411 (g)
SD_1	0.233 (g)

Secondary Seismic Hazards

Secondary seismic hazards related to ground shaking include soil liquefaction, ground subsidence, tsunamis, and seiches. The site is far inland, so the hazard from tsunamis is non-existent. At the present time, no significant water storage reservoirs or surface water bodies are located at a critical elevation or location within the immediate vicinity of the site. Therefore, hazards from seiches are considered nil as well.

Soil Liquefaction: Liquefaction is the loss of soil strength from sudden shock (usually earthquake shaking), causing the soil to become a fluid mass. In general, for the effects of liquefaction to be manifested at the surface, groundwater levels must be within 50 feet of the ground surface and the soils within the saturated zone must also be susceptible to liquefaction. The potential for liquefaction to occur at this site is considered negligible because the following factors: depth of groundwater beneath the site exceeds 50 feet and low anticipated seismic accelerations in the region.

Slope Stability

Native slopes in the project site vicinity descend generally toward the north and northeast at gradients ranging from approximately 5% to 30%. Site elevations range from approximately 500 to 600 feet above mean sea level (MSL), for a total relief of about 100 feet from the upper site boundary near the railroad fill berm down to the Amon Creek bed at the northern boundary of the property.

A field reconnaissance of the project site was performed to observe site conditions and correlate the information gathered from our preliminary research. During our reconnaissance, we looked for common geomorphic features of landslides as well as indications of possible signs demonstrating recent activity and instability of slide masses. No evidence of any significant slope instability within the native conditions was noted at the site.

We have performed slope stability analyses of selected critical slope conditions of the site (see Slope Stability Analysis, below). In our modeling of the slope configurations, we have analyzed possible failure surfaces incorporating strength parameters, geology, and geometry based on our site investigation and research. Based on our analyses, it appears that both the native and man-made

slopes with gradients ranging from approximately 5 to 30% are considered grossly stable with relatively high factors of safety against movement. The existing native onsite vegetation serves to provide protection from shallow surficial instability and erosional forces.

Flooding and Erosion

FEMA flood maps for the site vicinity along with USGS topographic maps were reviewed to evaluate the flooding potential at the site. Areas proposed for development at the project site are not located within flood plains (Flood Zone C). The project site is situated in an area where sheet flow and erosion may occur. See Appendix IX for FEMA Flood Map of the site vicinity.

The site soils are known to be moderately to highly erodible. The need for and design of flood control and erosion protection measures is within the purview of the design civil engineer. In general, erosion should be mitigated with best management practices (BMPs) consisting of proper drainage design including collecting and disposal (conveyance) of water to approved points of discharge in a non-erosive manner. Appropriate project design, construction, and maintenance will be necessary to mitigate the site erosion hazards**.**

Slope Stability Analysis

Slope stability analyses were conducted on selected existing slopes to evaluate their present state of stability as well as probable proposed reconfigured slopes for the proposed project. The analyses were conducted using a generalized geologic cross section model developed from the existing site topography and data obtained from our subsurface explorations.

The slope stability analyses were conducted by a two-dimensional limit equilibrium stability analysis of selected trial failure surfaces using the computer program *STABL6* (Carpenter, 1986). Potential circular-arc failure surfaces were evaluated using the modified Bishop Method. The computer program searched for critical potential failure surfaces with low computed factors of safety.

The computed factor of safety (FS) against slope failure is simply the ratio of total resisting forces or moments (strength of the slope) to the total driving forces or moments for planar or circular failure surfaces respectively. A slope with a factor of safety of 1.0 is in equilibrium, indicating that

the disturbing forces driving the slope down are equal to its strength to resist failure. Simply put, slope-failure results when the strength of the slope is overcome by gravity.

The selection of unit weight and shear strength parameters for the various earth materials were based on professional judgment and data obtained during our field investigation, laboratory testing, review of previous studies, research, and previous experience with similar materials in similar geotechnical and geologic settings. Engineering and geologic judgment must be applied to the results of shear tests in order to consider lateral and vertical variations in the subsurface conditions, such as degree of cementation, fracturing, planes of weakness, and gradational characteristics. The following geotechnical strength parameters were used in our stability calculations:

Earth Material	Shear Strength Parameters		Unit Weight
	Friction Angle: ϕ	Cohesion: c (psf)	(pcf)
Native Loess / Silty Sand (SM) / Sandy Silt (ML)	30	0	118
Compacted Engineered Fill (derived from the native soils)	32	0	122

The results of the stability analyses, using the shear strength data as described above, are presented on the following table. The factor of safety of against slope failure was computed for existing and proposed slope configurations as indicated on the attached table. The results of the slope stability analyses are attached to this report in Appendix V and summarized below:

Slope Section	Approximate Maximum Slope Gradient	Slope Condition	Static Factor of Safety
Section A-A’	10%	Native	7.0
Section B-B’	12%	Native	4.8
Section C-C’	14%	Native	4.6
Section D-D’	28%	Native	2.1
Re-Graded 2.5:1 Slope	40%	Proposed	1.6

GN Northern recommends that all project slopes should meet, or be designed and constructed to meet, a minimum factor of safety of 1.5 for the static condition. Based on our analysis, the existing native site slopes exceed the minimum recommended factor of safety. Our analysis further indicates that the proposed graded slopes can be properly designed and constructed to meet or exceed this minimum.

CONCLUSIONS

The following is a summary of our conclusions and professional opinions based on the data obtained from a review of selected technical literature and the site evaluation.

General:

- Based on our understanding of the proposed development and subsurface conditions, from a geotechnical and geologic perspective, it is our professional opinion that the site is suitable for the proposed development, provided the recommendations in this report are followed in the design and construction of this project.

- While portions of the site are mapped on the City of Richland Geologically Sensitive Areas Map for steep slopes (see attached maps, Figures 4 & 5 in Appendix I), our site reconnaissance and review of available USGS topographic maps of the site, indicated that native site slope within the proposed development areas do not exceed gradients steeper than approximately 3.5 to 1.

Geotechnical Constraints and Mitigation:

- The primary geologic hazards and site constraints are surface erosion and the potential for slope instability. Appropriate eengineered design and careful construction, as recommended herein can readily mitigate these geologic constraints and reduce risk to acceptable levels.

- The underlying geologic condition for seismic design is Site Class “D”. Seismic design for the project should comply with the 2012 edition of the International Building Code.

- Adherence to the grading and geotechnical recommendations in this report should reduce

the potential hazard of slope instability and settlement problems.

- The upper site soils were found to be relatively loose to medium dense and are generally unsuitable in their present condition to support structures, fill, and hardscape. The soils within the building and structural areas will require moisture conditioning, over-excavation, and re-compaction to improve bearing capacity and reduce the potential for differential settlement from static loading. Site soils can be readily cut by normal grading equipment.

- The areas near the southern boundary of the site include apparent historic fill placed during re-alignment of the railroad. Soils in this area may require additional exploration and evaluation to provide appropriate geotechnical recommendations.

- The native site soils are susceptible to wind and water erosion. Preventative measures to control stormwater and reduce sheet flow and erosion should be incorporated into site grading plans by the project civil engineer. Stormwater run-off should be collected and discharged in a non-erosive manner away from all slopes and foundation areas to improve stability and reduce potential settlement. Dust control measures should also be implemented during construction.

- Final design of the project site layout (Final Plat) should provide appropriate setbacks and buffer zones from ecologically sensitive areas along the Amon Creek/Wasteway.

- Our evaluation indicates that the native and proposed site slopes (max gradient 2.5H:1V) will remain stable. Exposed slope faces are subject to surface erosion and should be protected with re-vegetation or other appropriate erosion control measures

- The risk posed by other geologic hazards, including seismic ground shaking and liquefaction are considered negligible on this site.

- The recommendations in this report apply to the proposed mass grading of the residential development portions of the Clearwater Creek subdivision project including preliminary lot development, site slopes, roadways, and infrastructure.

- Secondary geotechnical evaluations and oversight may be warranted on a per-case basis

based on the specifics of future proposed developments following completion of the mass grading. GN Northern (the Geotechnical Engineer of Record) should review future project plans for the development in order that earthwork and foundation recommendations may be properly interpreted and implemented in the design and specifications and determine if any supplemental geotechnical work may be necessary.

GEOTECHNICAL RECOMMENDATIONS

The recommendations presented in this report are predicated upon a program of appropriate monitoring and testing of the site preparation and foundation construction by a qualified representative of the geotechnical engineer (soils engineering technician). The following sections are intended to reduce the potential earthwork related risks at this site.

Pre-Wetting

Because of the dry soil conditions at the site, moisture conditioning will be necessary to facilitate construction of the embankments and for dust control and densification. We recommend pre-watering the areas to be excavated. By pre-watering, the moisture content of the soil can be brought to near optimum moisture content, thereby reducing the need to add water during placement of the embankment. Significant savings in time and effort during compaction can often be realized through pre-watering of the excavation areas.

We expect dry weather conditions during mass grading operations at the site. The critical element of mass grading will be moisture conditioning of the relatively dry on-site native soils. It is imperative that compaction shall be conducted while the moisture content is near optimum to achieve passing compaction testing results. Overly dry soils could pose difficulties in obtaining passing compaction test results which may lead to over-excavation and recompaction or replacement with imported structural fill. Furthermore, due to significant silt content, excessive moisture could lead to rutting and pumping creating unstable subgrade conditions. We recommend that sufficient water be added to the borrow area to bring the soil to ±2 percent of optimum moisture content at a depth of 2 feet below the bottom of the proposed excavation. We expect optimum moisture content on these

soils to be in the range of 14 to 18 percent of dry weight. Based on our experience, the wetted front is expected to advance at a rate of about 12 inches per 24 hours of water application.

Clearing and Grubbing

A representative of the geotechnical engineer should observe site clearing, grading, and the bottoms of excavations before placing fill. Local variations in soil conditions may warrant increasing the depths of grading preparations including over-excavation and re-compaction. Seasonal weather conditions may adversely affect grading operations. To improve compaction efforts and prevent potential pumping ground conditions, we suggest site grading should generally be performed during dryer periods of the year.

At the start of site grading, existing vegetation, large roots, non-engineered fill, any encountered construction debris, trash, and any abandoned underground utilities shall be removed from the proposed building and structural areas. The surface shall be stripped of all topsoil and/or organic growth and removed from the construction area. Areas disturbed during clearing shall be properly backfilled and compacted as described below.

Subgrade Preparation

Prior to construction of any embankment or site fill areas, the areas to receive fill should be cleared and grubbed of all vegetation and organic material. The surface should be stripped of organic growth and removed from the construction area. The stripped surficial soils may be reused as fill in landscape areas only and should not be used as structural fill or general fill. Should any uncontrolled or undocumented artificial fill or debris be encountered in load-bearing areas or pavement areas during stripping and grubbing, these materials should be removed and replaced with compacted structural fill prior to construction of the site fill. Beneath all new embankments or site fill areas, the top 12 inches of subgrade should be compacted to a non-yielding surface and to an in-place dry density of at least 95 percent of the maximum dry density as determined by the ASTM D 1557.

Compaction Requirements

The native silt and sand soils, free of roots and organic matter, are suitable for placement as fill for structural fill, general fill and backfill, but may not be suitable in areas of slope reconstruction. The

fine-grained soils will require careful control of moisture at which compaction could be performed due to significant silt content. In addition, the fine-grained, silty soils will require compaction to be performed within a relatively narrow range (within ±2 percent) of optimum moisture to achieve the proper degree of compaction. The sandy silt soils, when moist beyond optimum conditions, will have a tendency to rut. Fill material shall be brought to the specified moisture range before compaction. The moisture content at the time of compaction shall be maintained within the limits to prevent dilatancy and bulking. Material that is too wet for compaction shall be allowed to dry by aeration or removed depending on the time of year. Fill shall be placed such that the distribution of material is uniform and is free from lenses, pockets, streaks, frozen soil, or layers of materials differing substantially from surrounding material. No fill shall be placed on a frozen surface.

All fill or backfill must be appropriately monitored and tested by a qualified representative of the geotechnical engineer (soils engineering technician). Structural fill and all backfill shall be placed in maximum 8-inch loose lifts if smaller equipment is used. If larger equipment such as loaded scrapers, heavy compactors, or off-road trucks are used for compaction, the lift thickness may be increased to a maximum 12 inches, if testing confirms recommended compaction is achieved. All structural fill, general fill, and backfill should be moisture conditioned to near optimum moisture content and compacted to an in-place dry density of at least 95 percent of the maximum laboratory dry density as determined by ASTM D 1557.

The silty and sandy soils are moisture and disturbance sensitive and may become unstable from increased moisture content (when thawed and from precipitation) and are disturbed (rutted) by construction traffic if wet. This soil is also susceptible to erosion in the presence of flowing water. The site shall be graded to prevent water from ponding within construction areas and/or flowing into excavations. Accumulated water must be removed immediately along with any unstable soil. We further recommend that soils that become unstable are to be either:

a. Removed and replaced with structural compacted fill; or
b. Mechanically stabilized with a coarse crushed aggregate and compacted into the subgrade.

Unprotected subgrade soils could deteriorate under construction traffic during inclement weather conditions. We recommend that construction equipment be prohibited from traversing prepared subgrade areas during wet weather conditions.

Engineered Structural Fill and Imported Structural Fill

If needed, imported fill soils (if needed) shall be non-expansive, granular soils meeting the USCS classifications of SM, SP-SM, or SW-SM with a maximum rock size of 3 inches and 5 to 15% passing the No. 200 sieve. The geotechnical engineer shall evaluate the import fill soils before hauling to the site. However, because of the potential variations within the borrow source, import soil will not be prequalified by our geotechnical engineer. The imported fill shall be placed in lifts no greater than 8 inches in loose thickness and compacted to at least 95% of the maximum dry density as determined by ASTM D 1557 near optimum moisture content.

An alternative option for imported structural fill material may consist of well-graded crushed aggregate material meeting the following grading requirements:

Sieve Size	Percent Passing
3”	100%
¾”	>70%
#4	35-55%
#200	Less than 8%

Shrink and Swell

The site soil is naturally in a loose to medium dense condition. Because of this condition, we estimate native soils to shrink approximately 10 to 25 percent after compaction, however actual shrinkage results may vary significantly across the site. In other word, up to 120 cubic yards of in-place bank material will be required to produce 96 cubic yards of compacted embankment. Swell from bank volume to bulk hauling volume is expected to be approximately 20 percent. The shrinkage factor is an estimation based on our experience and can be confirmed from laboratory testing on the native soils if needed.

Temporary Excavation/Cut

It shall be the responsibility of the contractor to maintain safe temporary slope configurations since the contractor will be at the job site, able to observe the nature and condition of the slopes, and will be able to monitor the subsurface conditions encountered. Unsupported vertical cuts deeper than 4 feet are not recommended if worker access is necessary. The cuts shall be adequately sloped, shored, or supported to prevent injury to personnel from caving and sloughing. The excavation shall conform to applicable federal, state and local regulations.

According to chapter 296-155 of the Washington Administrative Code (WAC), it is our opinion that the soil encountered the site will classify as Type C soils. Actual classification of site specific soil type as they pertain to excavating, trenching, and shoring safety should be based on real-time observations and determinations of exposed soils by the Competent Person (as defined by OSHA 29 CFR 1926.32(f)) in the field during grading and trenching operations. For excavation planning purposes, we recommend that temporary, unsupported, open cut slopes shall be no steeper than 1.5H:1V in Type C soils.

Slope Construction and Protection Guidelines

In the following paragraphs we have summarized some of the more typical slope stability recommendations that we use to address cut, fill, and surficial stability issues. Benching of slopes should be done in accordance to the International Building Code (IBC) 2009 Appendix J Section 107.3. The geotechnical engineer of record (GN Northern, Inc.) should be consulted if clarification of the grading recommendations in this report is needed.

Fill slopes shall be constructed at a maximum slope of 2.5H:1V. Fill slopes should be constructed with suitable approved structural fill soil that has been properly moisture-conditioned and compacted as recommended in the geotechnical report. Fill slopes should be overfilled and trimmed back to uniformly compacted material. The final slope surface should be track-walked or grid-rolled to improve the slope's resistance to erosion.

Proper slope protection and maintenance should help minimize slope erosion (from both wind and water) and improve the stability of the project slopes. The project soils are prone to erosion and will require protection and maintenance. Since the site soils are susceptible to wind and water

erosion, it is recommended that erosion control measures, such as planting, erosion control blankets or fabrics, sprayed tackifiers, or some combination of these, be utilized on all slopes within this project. A qualified contractor should be retained for slope planting. Landscaping should take into consideration the engineering characteristics of the slopes, especially with regards to the surficial stability.

Periodic maintenance of slopes and drainage structures should be performed. Drainage inlets, outlets, and spillways should be periodically inspected and cleaned of soils and debris. All slopes should be periodically inspected for evidence of cracking, erosion, and rodent infestation. Any observed problems should be repaired.

Key Fill Material onto the Native Cut/Existing Ground

Loose and/or organic rich soils within the foundation of a new fill slope shall be completely removed and replaced with approved structural compacted fill material. The foundation surface upon or against which new fill is to be placed shall be scarified to a depth of at least 12 inches prior to the placement of the first lift of fill. This helps ensure a good bond between the foundation and new fill, and to eliminate a plane of weakness at the interface.

Fill Placement on Cut Slope

When placing fill in horizontal lifts adjacent to areas sloping steeper than 5H:1V, horizontal keys and vertical benches should be excavated into the adjacent slope. Keying and benching should be sufficient to provide minimum 5 foot wide benches and a minimum of 2.5 feet vertical bench height within the firm natural ground. No compacted fill should be placed in an area subsequent to keying and benching until the area has been reviewed by a qualified representative of the Geotechnical Engineer of Record (GN Northern). Benches shall be formed in the entire face of the natural sloping ground. Benching should proceed in at least 2.5-foot vertical increments until the desired finished grades are achieved. To key the fill into the native cut bench, fill shall be placed on the surface of each native cut bench in uniform lifts and each lift shall be compacted to at least 95 percent of the maximum dry density as determined by ASTM D1557.

If excavations for cut slopes expose loose, cohesionless, or otherwise unsuitable material, over-excavation and replacement of the unsuitable materials with compacted fill shall be accomplished as recommended by the geotechnical engineer.

Fill Slopes

Compacted fill slopes shall be overbuilt and cut back to grade, exposing the firm, compacted fill inner core. The actual amount of overbuilding should vary as field conditions dictate. The degree of overbuilding should be increased until the desired compacted slope surface condition is achieved. Care should be taken by the contractor to provide thorough mechanical compaction to the outer edge of the overbuilt slope surface. Fill placement should proceed in thin lifts (8-12 inch loose thickness, depending upon compaction equipment). Each lift should be moisture-conditioned and thoroughly compacted. The desired moisture condition should be maintained during the period between successive lifts, and each lift should be tested to ascertain that desired compaction is being achieved. Each lift should extend horizontally to the desired finished slope surface or farther as needed to establish desired grades. Grade during construction should not be allowed to roll-off the edge of the slope. The outer edge of the slope may be slightly elevated. Slough resulting from the placement of individual lifts should not be allowed to drift down over previous lifts.

At intervals not exceeding 4 feet in vertical slope height or the capability of available equipment, whichever is less, fill slopes should be thoroughly back-rolled utilizing conventional equipment. Care should be taken to maintain the desired moisture conditions as needed prior to back-rolling. Upon achieving final grade, the slopes should again be moisture conditioned and thoroughly back-rolled. The use of a side boom roller may be necessary as well as vibratory methods. Without delay, the slopes should then be grid-rolled to achieve a relatively smooth surface and uniformly compact condition. Slope construction procedures shall be monitored, and moisture and density tests shall be taken at regular intervals.

The finished site should be graded to drain in accordance with IBC 2009 Appendix J Section 109, and compacted to a dense, unyielding condition. Dust control measures must be implemented as soon as practical following grading completion. Soils should be stockpiled away from the top of

steep cut slopes. No heavy equipment should be allowed near the top of temporary cut slopes unless the cut slopes are adequately braced. Final (permanent) fill slopes should be graded to an angle of 2.5H:1V or flatter.

Temporary Excavation and Utility Trenches

Temporary excavations should be made in accordance with requirements of Chapter 296-155, Part N of the WAC. Our site exploration and knowledge of the general area indicates there is a potential for caving of site excavations (utilities, footings, etc.). Temporary excavations within silty/sandy soil should be kept moist (but not saturated) to reduce the potential of caving or sloughing. Where excavations over 4 feet deep are planned, lateral bracing or appropriate cut slopes of 1.5H:1V or flatter should be provided. No surcharge loads from stockpiled soils or construction materials should be allowed within a horizontal distance measured from the top of the excavation slope and equal to the depth of the excavation unless appropriate shoring is provided.

In accordance with the standards of WAC Ch. 296-155, Part N, and the general soil information obtained during our field exploration, classification of the near-surface on-site soils will likely be characterized as Type C. Actual classification of site specific soil types as they pertain to excavating, trenching, and shoring safety should be based on real-time observations and determinations of exposed soils by the Competent Person (as defined by OSHA 29 CFR 1926.32(f)) in the field during grading and trenching operations.

Utility Trenches: Backfill of utilities within roads or public right-of-ways should be placed in conformance with the requirements of the governing agency (water district, public works department, etc.). Utility trench backfill within private property should be placed in conformance with the provisions of this report. In general, service lines extending inside of property may be backfilled with native soils compacted to at least 95% of the maximum dry density as determined by ASTM D1557 method above the pipe zone elevation. Sufficient backfill should be placed over the utility before compacting with heavy compactors to prevent damage. Backfill operations should be observed and tested to monitor compliance with these recommendations.

GENERAL CONSIDERATIONS FOR LOT DESIGN AND CONSTRUCTION

Foundations bearing soils shall be constructed as recommended herein. Individual lots are considered buildable provided compaction conditions are maintained from the end of the lot development operations to construction of the foundation elements. GN Northern may be retained, at the discretion of the developer and/or City of Richland, to provide individual lot investigations at the time of lot development after the mass grading/pad preparation has been completed to confirm compaction/in place densities of bearing soils and inspect any unusual soil conditions (i.e. fill soils, unusually loose/soft soils, etc.). GN Northern shall review significant changes in design (i.e. grade changes, partial cut and partial fill grade, new cuts greater 4 feet, swimming pools and/or daylight basements) not mentioned in this report. The aforementioned conditions shall be brought to the attention of the geotechnical engineer immediately for further recommendations, if necessary. Changes to the building assumptions discussed in (but not limited to) the "Proposed Construction" section of this report not brought to our attention shall fall outside of the purpose and scope of this report.

The following information provides general design considerations based on the soil conditions encountered during exploration and reconnaissance. GN Northern should review the plans for all lots in order that earthwork and foundation recommendations may be properly interpreted and implemented in the design and specifications, and determine if any supplemental geotechnical work may be necessary prior to issuing building permits.

To provide an adequate foundation for the proposed residential structures, the following minimum parameters shall also be followed during home construction on the lot:

- In accordance with Chapter 4 of the IRC (Section R403.1), the lot shall be graded to drain surface water away from foundations. The minimum grade shall fall at least 6 inches within 10 feet of the foundation wall (2.5%). If slopes prohibit this fall rate then swales or drains shall be constructed to divert water away from the structure.

- Grades should be developed that do not allow runoff from the driveway to flow toward the house.

- Finished constructed slopes should not be steeper than 2.5H:1V for fill slopes and 2.5H:1V for cut slopes. If retaining walls are required in excess of 4 feet in height, they should be engineered to aid in long term performance and appropriate safety factors.

- Exterior foundations shall extend 12 inches plus 2 percent above the street gutter, except as permitted by the building official.

- Setbacks from slopes in excess of 33 percent shall be a minimum of 15 feet for ascending slopes or 40 feet for descending slopes. The building official may amend the slope setback based on the specific height to Height/2 for ascending slopes or Height/3 for descending slopes. In accordance with IBC 2009 Section 1808.7, footings on or adjacent to slope surfaces shall be founded in firm material with embedment and setback from the slope surface sufficient to provide vertical and lateral support for the footing without detrimental settlement.

- Foundation walls shall not be backfilled until the wall has sufficient strength or has been anchored to the floor above. Backfill shall be placed in lifts not exceeding 4 inches loose and compacted with a hand operated compaction device.

- Under-floor space ventilation shall be critical and should adhere to the IRC Section R408 requirements or City of Richland requirements, whichever is more restrictive.

Building Pad/Envelope Preparation

Individual lots proposed for future residential development will require remedial grading to improve bearing capacity and reduce the potential for differential settlement from static loading. Because of the relatively loose and under-compacted nature of the site soils, we recommend re-compaction of the subgrade soils within the proposed building areas for future construction of the residential structures.

The existing surface soils within the proposed building pad and foundation areas (building pad/envelope) shall be over- excavated to a minimum of 2 feet below existing grade or a minimum of 12 inches below proposed footing level (assuming a 24-inch deep footing), whichever is deeper. The over-excavation shall extend for 4 feet beyond the outer edge of all exterior footings. The

bottom of the sub-excavation shall be scarified, moisture conditioned, and re-compacted to at least 95% relative compaction (ASTM D 1557) for an additional depth of one foot. Increased depths of remedial grading may be necessary in isolated areas of lower strength soils are exposed due to natural variance in soils conditions. Structural fill placed and compacted under engineered controlled conditions is considered to be suitable for direct foundation support. The intent of these recommendations is to develop a uniform pad of compacted structural subgrade/fill beneath future foundations and slabs.

If grading for individual lots is not conducted during the mass grading phase, GN Northern may, at the request of the developer or owner, be retained for future footing observations and pad certification.

Foundations

In our opinion, typical single-family residences can be supported on conventional foundations bearing on recompacted dense soils placed as structural fill in accordance with the recommendations of this report. If conditions other than these are encountered, we should be contacted so our recommendations can be altered. Existing organic soils must be removed from the building areas.

The minimum footing depth shall be 24 inches below adjacent grades for frost protection and bearing capacity considerations. Footings constructed in accordance with the above recommendations may be designed for an allowable 1,500 pounds per square foot (psf) bearing pressure. The allowable bearing pressures presented above may be increased by 1/3 for short-term, transient loading conditions.

Slope Setbacks

In accordance with IBC 2009 Section 1808.7 *Footing Setbacks from Slopes*, "footings on or adjacent to slope surfaces shall be founded in firm material with embedment and setback from the slope surface sufficient to provide vertical and lateral support for the footing without detrimental settlement. Where the slope is steeper than 1 unit vertical in 1 unit horizontal, the required set back shall be measured from an imaginary plane 45 degrees to the horizontal, projected upward from the toe of the slope." The long term performance of the structure near slopes is dependent on the

protection of slopes from erosion or over steepening by cutting into the toe of the slope. Lots should be maintained to prevent erosion or undermining the toe. If the slopes will be modified from their constructed configuration, we recommend using properly designed retaining walls. Based on the existing site conditions, we anticipate cut and fill will be required to develop a level pad site for the residential home sites.

Basement/Retaining Walls

Retaining walls allowed to deflect may be designed for an active, equivalent fluid pressure of 31 psf per foot of depth. Retaining walls restrained from movement (basement walls) may be designed using an at-rest, equivalent fluid pressure of 50 psf per foot of depth.

The earth pressures presented above assume that no surcharge loads exist, that the backfill is level, that the retaining walls are backfilled with granular material and include a footing drain, and will not develop hydrostatic pressures. The project structural engineer should be responsible for the design of structural elements such as basement walls and footing considering the actual structural loading conditions in conjunction with the geotechnical parameters provided in the report.

Lateral Load Resistance

Lateral loads acting on the footings may be resisted by passive earth pressures acting against the sides of the footings and friction forces on the bottom of the footings. For lateral displacement design, the ultimate passive resistance of compacted, level backfill may be assumed to be equal to a 200 pcf equivalent fluid pressure. We recommend using a 0.35 friction coefficient to calculate sliding resistance between the footing bottom and the native soil or imported granular fill.

Slab-on-Grade Floors

Concrete slabs-on-grade may be supported directly on compacted soil in accordance with the grading recommendations of this report. The developer of individual lots should consider the use of an appropriate vapor retarder to reduce moisture transmission from the subgrade soils to the slabs. Prior to placing any slabs, we recommend compacting the top 12 inches of the exposed subgrade to a minimum in-place dry density of 95 percent of the maximum laboratory dry density determined

by ASTM D 1557. A 4-inch thick leveling course of 5/8-inch base course may be placed on the compacted subgrade to provide a working surface for the slabs, if desired.

Slab thickness and reinforcement of slabs-on-grade are contingent on the recommendations of the structural engineer or architect and the expansion index of the supporting soil. Based upon our findings, a modulus of subgrade reaction of approximately 200 pounds per cubic inch can be used in concrete slab design for the low expansion subgrade soils at the site. Concrete slabs and flatwork should be a minimum of 4 inches thick (actual, not nominal). We suggest reinforcing the concrete slabs to resist potential cracking. Concrete floor slabs may either be monolithically placed with the foundations or doweled after footing placement. The thickness and reinforcing given are not intended to supersede any structural requirements provided by the structural engineer.

Control joints should be provided in all concrete slabs-on-grade at a maximum spacing of 36 times the slab thickness (12 feet maximum on-center, each way) as recommended by American Concrete Institute (ACI) guidelines. All joints should form approximately square patterns to reduce the potential for randomly oriented shrinkage cracks. Construction joints in the slabs should be tooled at the time of the concrete placement or saw cut (¼ of slab depth) as soon as practical but not more than 8 hours from concrete placement. Construction (cold) joints should consist of thickened butt joints with ½-inch dowels at 18-inches on center or a thickened keyed-joint to resist vertical deflection at the joint. These procedures will reduce the potential for randomly oriented cracks, but may not prevent them from occurring.

Settlement

We estimate that foundations designed and constructed in accordance with the above recommendations will experience total settlements of less than 1-inch and differential limited to less ½-inch. This settlement estimate assumes maximum thirty (30) kip column loads and two (2.5) kips per linear foot wall loads. The settlements should occur rapidly as the loads are applied.

Surface Drainage

Site development plans should attempt to minimize introducing water onto the site slopes. This includes stormwater and irrigation. All surface runoff should be directed away from the foundation areas and the site slopes by grading. Runoff from each lot should be retained on site and not

allowed to flow onto slopes or adjoining lots. Grades around the perimeter of each residence shall fall at least six (6) inches within ten (10) feet of the foundation walls. If slopes prohibit this fall rate, swales or drains shall be constructed to divert water away from the structure. Water should not be allowed to flow uncontrolled onto the slopes.

We recommend the use of low volume irrigation systems adjacent to building foundations. Lawn areas should be irrigated for only short time periods to reduce the potential for excessive water infiltration into the subsurface soils. In addition, we recommend installing individual water meters on the irrigation system, if the irrigation water supply is separate from the potable water system. Residents should be encouraged to consult with an irrigation professional to establish an appropriate watering schedule for the applicable landscaping.

Soil Infiltration Rate

Infiltration testing was conducted utilizing a single ring infiltrometer consisting of a 12 inch diameter steel pipe driven into the ground at approximately 3 to 4 feet below ground surface. The area around the pipe was additionally backfilled using native soils. The locations of infiltration tests are shown on the attached Site & Exploration Map (Figure 2, Appendix I) attached to this report. Measurements of the drop in water level were taken until a stabilized rate was established for at least three (3) consecutive readings. The average infiltration rate was recorded at each test location. GN Northern recommends that a minimum factor of safety of 2 be applied to the measured average infiltration rate. The following table presents the field results of infiltration tests performed for this site:

Test Number	Test Location (GPS Coordinates)	Test Depth (ft), BGS	Tested Soil Type*	Soil Infiltration Rate	
				Inch/Min	Inch/Hour
P-1	46° 12’ 25.01” N, 119° 15’ 15.9” W	3	ML	0.038	**2.27**
P-2	46° 12’ 27.43” N, 119° 15’ 2.44” W	3	ML	0.036	**2.17**
P-3	46° 12’ 31.64” N, 119° 14’ 48.4” W	3	ML	0.067	**4.03**
P-4	46° 12’ 35.4” N, 119° 14’ 59.34” W	3	ML	0.045	**2.69**
P-5	46° 12’ 31.9” N, 119° 15’ 11.48” W	3	SM	0.19	**11.4**
P-6	46° 12’ 37.75” N, 119° 15’ 7.98” W	3	ML	0.057	**3.41**
P-7	46° 12’ 26.73” N, 119° 14’ 32.3” W	3	ML	0.072	**4.31**
P-8	46° 12’ 31.25” N, 119° 15’ 22.6” W	3	ML	0.057	**3.42**
P-9	46° 12’ 36.8” N, 119° 15’ 18.18” W	4	ML	0.04	**2.38**
P-10	46° 12’ 44.5” N, 119° 15’ 19.26” W	4	SM	0.156	**9.38**
P-11	46° 12’ 40.9” N, 119° 14’ 12.63” W	3	ML	0.059	**3.53**
P-12	46° 12’ 44.19” N, 119° 15’ 5.66” W	3	SM	0.208	**12.47**
P-13	46° 12’ 43.37” N, 119° 14’ 49” W	3	SM	0.195	**11.7**

* ML=Silt/Sandy Silt * SM=Silty Sand

General

Develop and maintain site grades that will rapidly drain precipitation and surface runoff away from the foundation and subgrade soils both during and after construction. A minimum slope of 3% is recommended for all vegetated or exposed soil areas and 1.5% for all paved areas.

CONTINUING SERVICES

Two additional elements of geotechnical engineering services are important to the successful completion of this project. GN Northern recommends the following:

Consultation with GN Northern (the Geotechnical Engineer of Record) during the design phase: This is essential to ensure that the intent of our recommendations are incorporated in design decisions related to the project and that changes in the design concept consider geotechnical aspects. We recommend that the Geotechnical Engineer of Record (GN Northern, Inc.) be retained by the permit applicant (lot developer/owner) to review the plans for future developments to ensure that the intent of the geotechnical recommendations of this report are incorporated in the project design and foundation plans.

Observation and monitoring during construction: This report is based on the assumption that an adequate program of client consultation, construction monitoring, and testing will be performed during the final design and construction phases to check compliance with these recommendations. Maintaining GN Northern (the Geotechnical Engineer of Record) to monitor grading operations and confirm site conditions are consistent with those used in our analysis and design will provide continuity of services. If we are not retained to provide the recommended construction observation services, we cannot be responsible for geotechnically-related construction errors or omissions, nor can we provide any opinions regarding conformance of the construction to the report recommendations.

LIMITATIONS

This report has been prepared in accordance with generally accepted soil and foundation engineering practices in this area for use by the client for site development, foundation design and construction purposes. The recommendations presented in this report are based on current theories and the experience of our geotechnical engineers on the behavior of native soils and fill materials. The recommendations submitted in this report are based upon the data obtained from the shallow geotechnical exploratory test pits and observations and field testing of the existing surface soils at the site and the proposed site grading and construction discussed in this report. The nature and extent of subsurface variations across the site may not become evident until construction. If during construction, fill, soil, rock, or water conditions appear to be different from those described herein, we should be advised at once so re-evaluation of the recommendations can be made. The information indicated on the fifty (50) test pit logs and visual inspection of the existing slopes represent subsurface conditions at the location of the test pits at the time of excavation. Subsurface conditions may differ at other locations and may change at this location with the lapse of time.

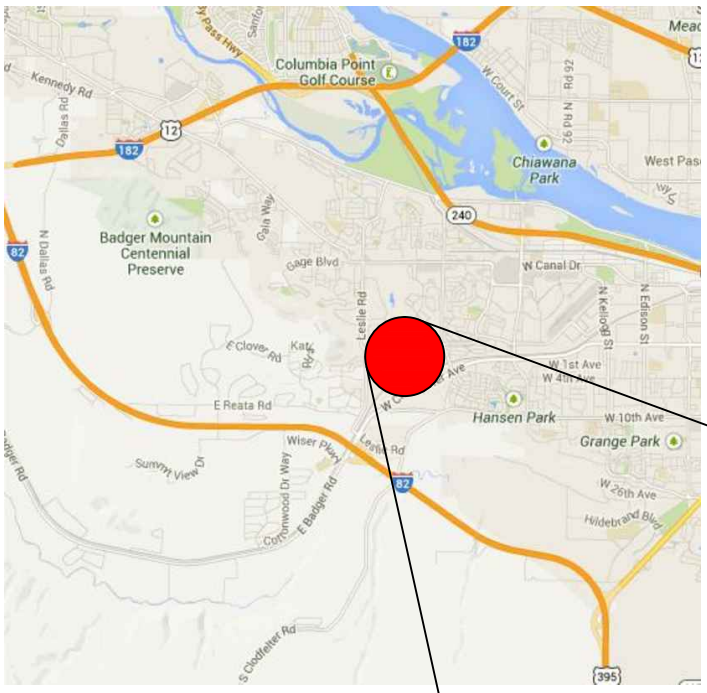
APPENDICES

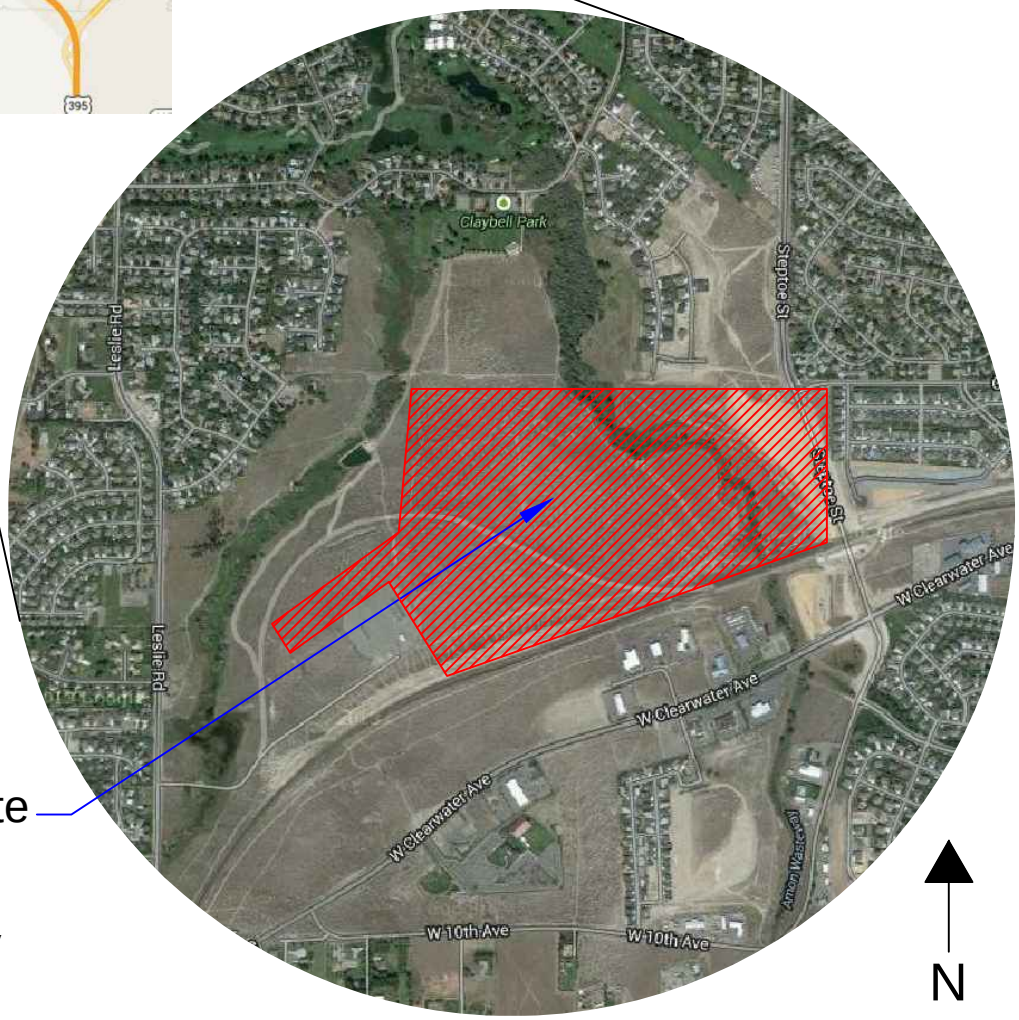
Appendix I

Figures (Fig. 1 – Fig. 6)

Northern, Inc.

Consulting Engineers Environmental Scientists Construction Materials Testing





Project Site

N

Notes:

1. Base map and image underlay provided by Google Earth.

GN Northern, Inc.

Job Number: 213-416

Vicinity Map
Clearwater Creek
Richland, Washington

Date	Drawn By	Reviewed By	Figure
11-11-13	YM	KH	1

Notes:
Base map titled 'Preliminary Plat For: Beer Falls', dated 6/10/13, provided by Hayden Homes

LEGEND:

- Borehole Location
- Test Pit Location
- Infiltration Test Location

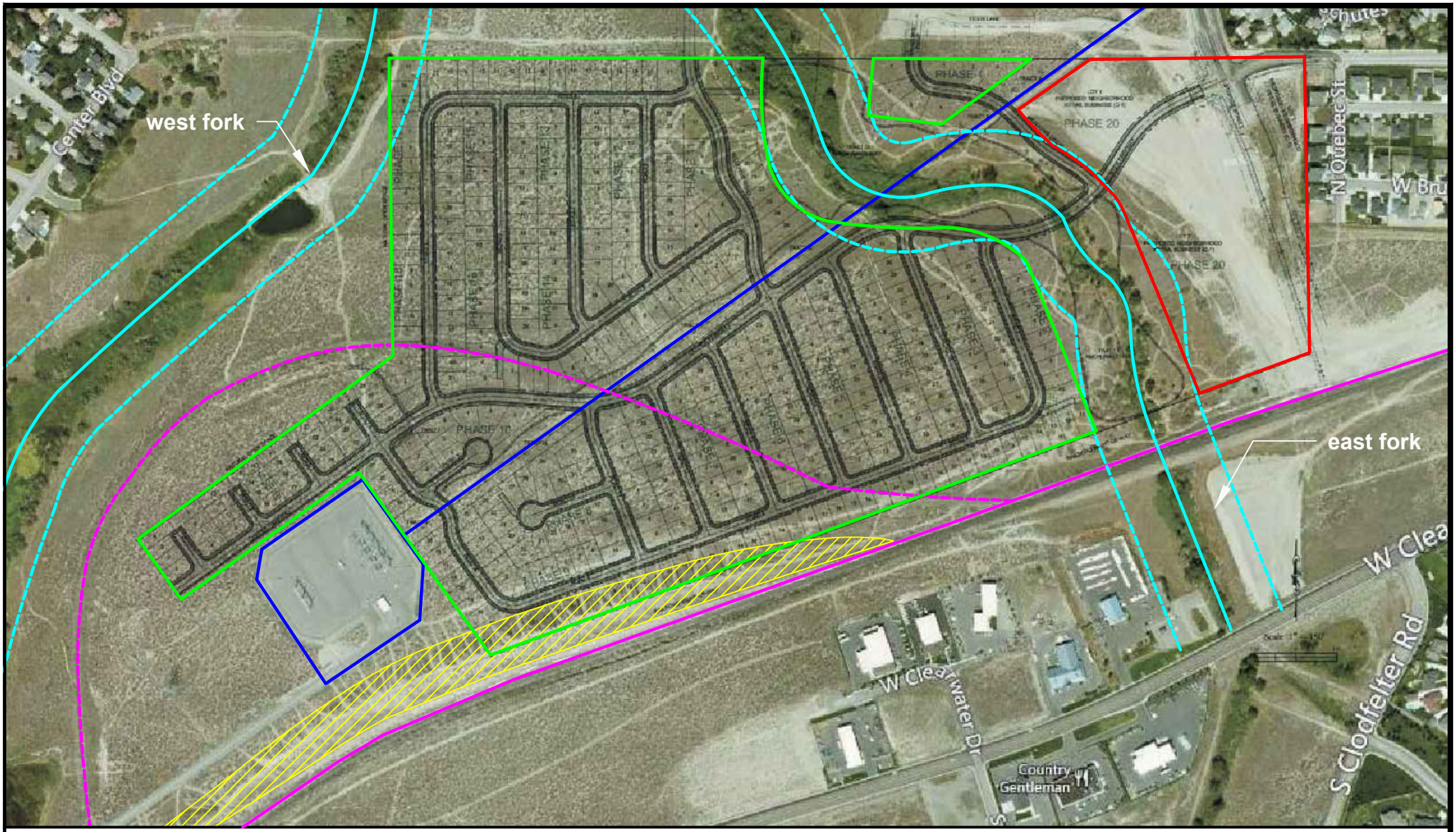
Northern, Inc.

Consulting Engineers Environmental Scientists Geologists
Construction Materials Testing Geophysical Services

Job No. 213-416

Site & Exploration Map
Clearwater Creek
Richland, Washington

Date	Drawn By	Reviewed By	Figure
11-11-2013	YM	KH	2



Notes:
- Overlay titled 'Preliminary Plat For: Beer Falls', dated 6/10/13, provided by Hayden Homes
- Base map from Google Earth

MAP SCALE (feet)

0 200 400

N

LEGEND:

- Proposed Residential Lots
- Proposed Commercial Lots
- BPA Substation/ Trasmission Line
- Existing Railroad Tracks
- Abandoned Historic Railroad
- Railroad Fill Berm
- Amon Creek/Wasteway
- Approx. extent of 200 ft easment from Amon Creek/Wasteway

Northern, Inc.

Consulting Engineers Environmental Scientists Geologists
Construction Materials Testing Geophysical Services

Job No. 213-416

Site Features & Constraints Map
Clearwater Creek
Richland, Washington

Date	Drawn By	Reviewed By	Figure
11-11-2013	YM	KH	3

N.T.S.

Notes:

- Base map titled 'Preliminary Plat For: Beer Falls', dated 6/10/13, provided by Hayden Homes
- Overlay from City of Richland's Geological Sensitve Areas Map, dated August 2013

LEGEND:

- Geologic Hazard Area (Steep Slopes)
- Flood Plain (Includes Wetlands)
- Project boundary

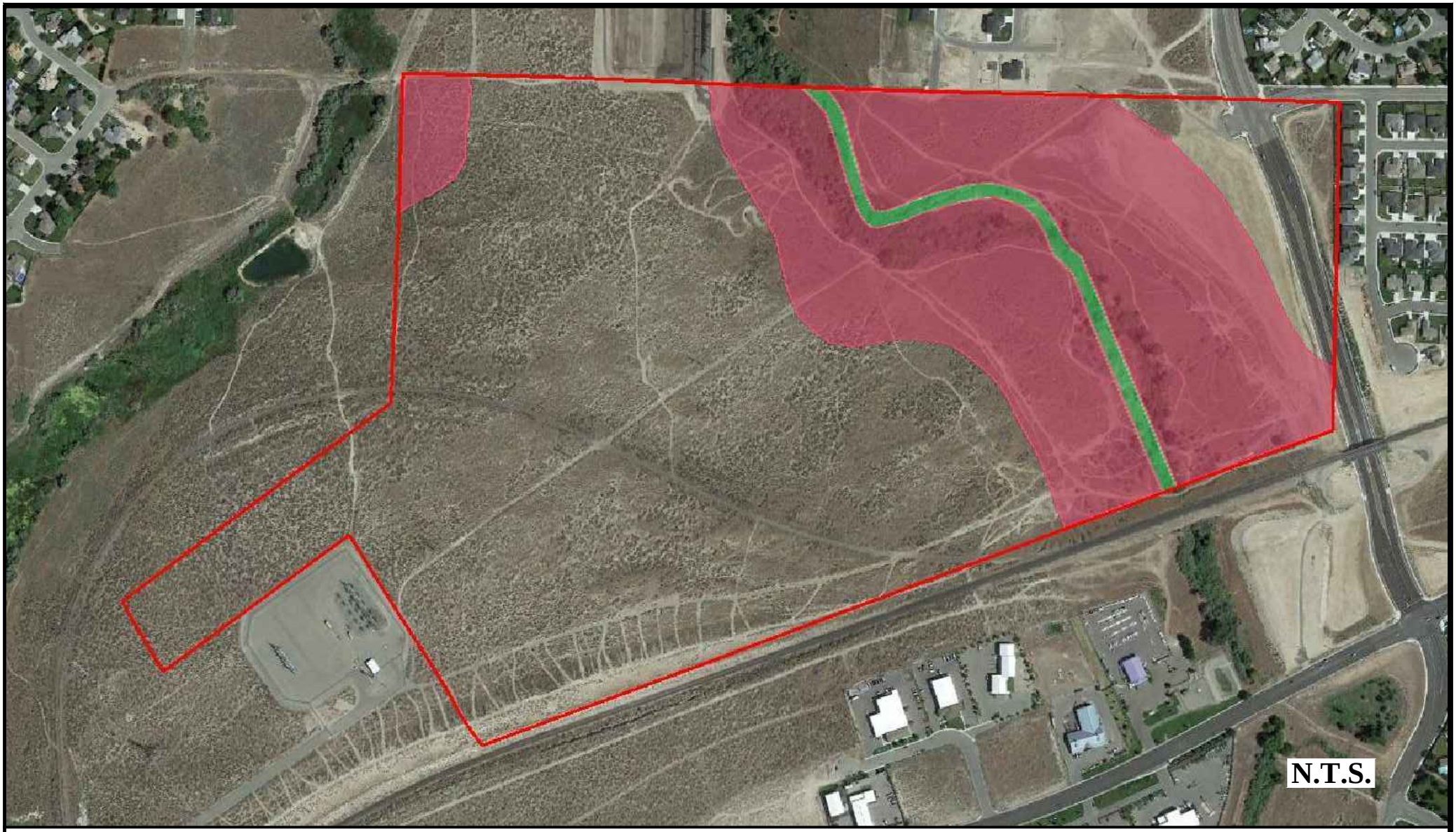
Northern, Inc.

Consulting Engineers Environmental Scientists Geologists
Construction Materials Testing Geophysical Services

Job No. 213-416

COR Geological Sensitive Areas & Plat Overlay Map
Clearwater Creek
Richland, Washington

Date	Drawn By	Reviewed By	Figure
11-11-2013	YM	KH	4



Notes:

- Base map titled 'Preliminary Plat For: Beer Falls', dated 6/10/13, provided by Hayden Homes
- Overlay from City of Richland's Geological Sensitve Areas Map, dated August 2013

N

LEGEND:

- Geologic Hazard Area (Steep Slopes)
- Flood Plain (Includes Wetlands)
- Project boundary

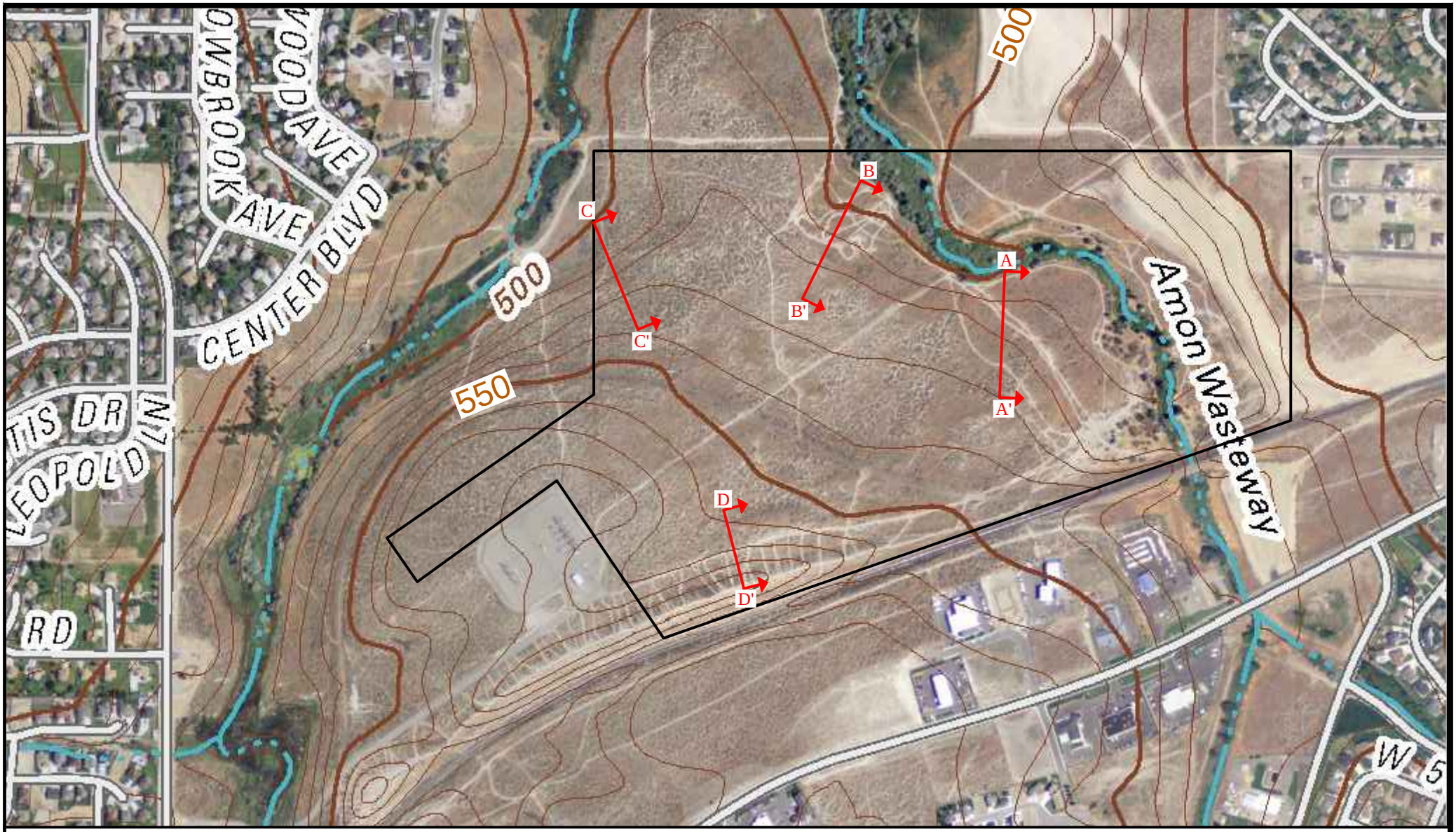
Northern, Inc.

Consulting Engineers Environmental Scientists Geologists
Construction Materials Testing Geophysical Services

Job No. 213-416

COR Geological Sensitive Areas & Aerial Overlay Map
Clearwater Creek
Richland, Washington

Date	Drawn By	Reviewed By	Figure
11-11-2013	YM	KH	5



Notes:

- Base map from 2011 USGS Topographic Maps for Badger Mountain & Kennewick Quadrangles

MAP SCALE (feet)

0 400 800

N

LEGEND:

Cross sections for Slope Stability Analysis

Project boundary

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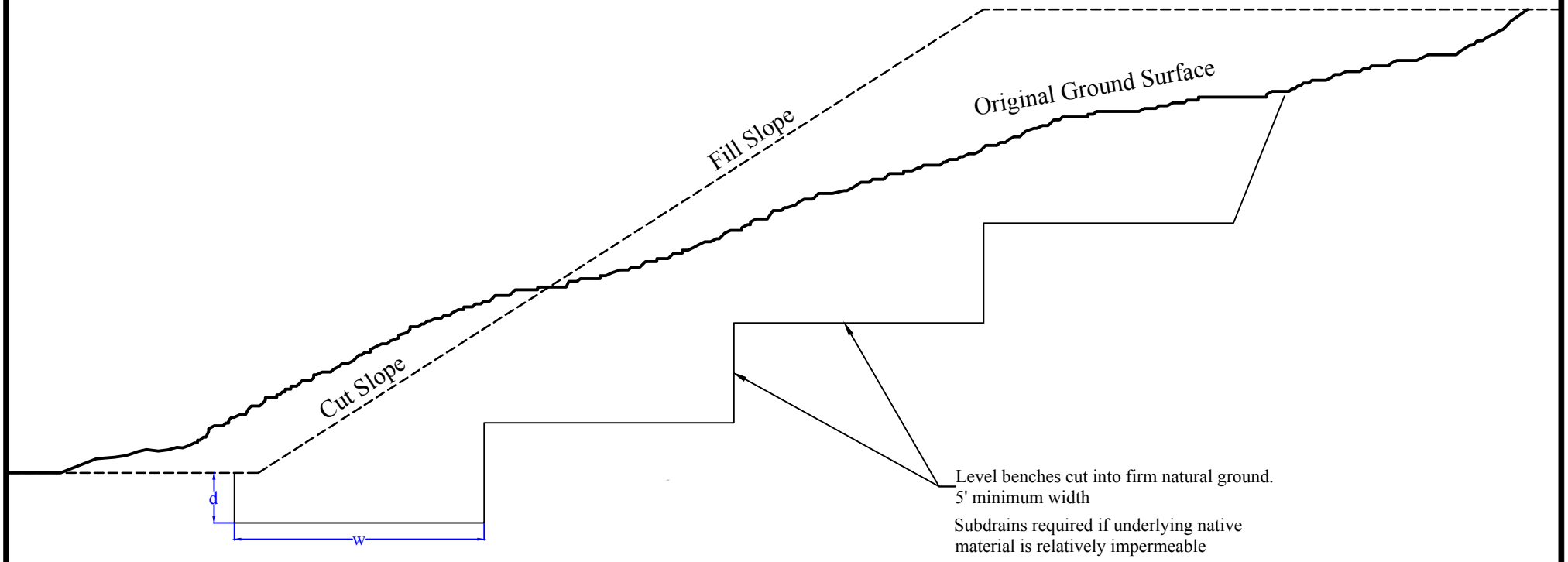
Construction Materials Testing Geophysical Services

Job No. 213-416

USGS Topographic Map with Slope Cross-Sections
Clearwater Creek
Richland, Washington

Date	Drawn By	Reviewed By	Figure
11-11-2013	YM	KH	6



Notes:
d = minimum downslope key depth into dense natural ground approved by the project engineering geologist or geotechnical engineer.

w = Width of keyway: Half the slope height or 10' minimum

N.T.S.

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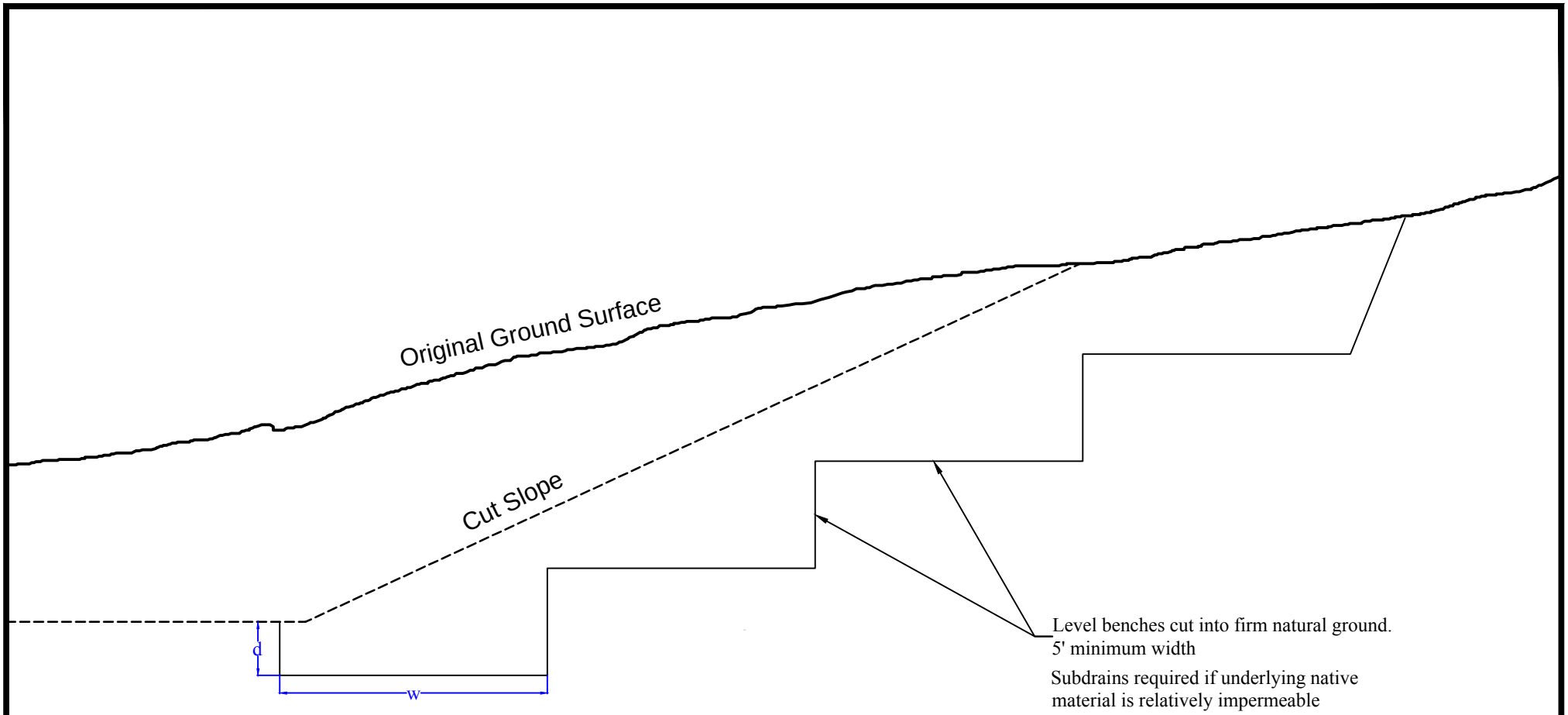
* Geologists * Construction Materials Testing

GN Northern, Inc.
Project No. 213-416

Cut/ Fill Detail: Fill Over Cut Condition
Clearwater Creek
Richland, Washington

Date	Drawn By	Reviewed By	Figure
11/11/2013	YM	KAH	7A



Notes:
d = minimum downslope key depth into dense natural ground approved by the project engineering geologist or geotechnical engineer.

w = Width of keyway: Half the slope height or 10' minimum

N.T.S.

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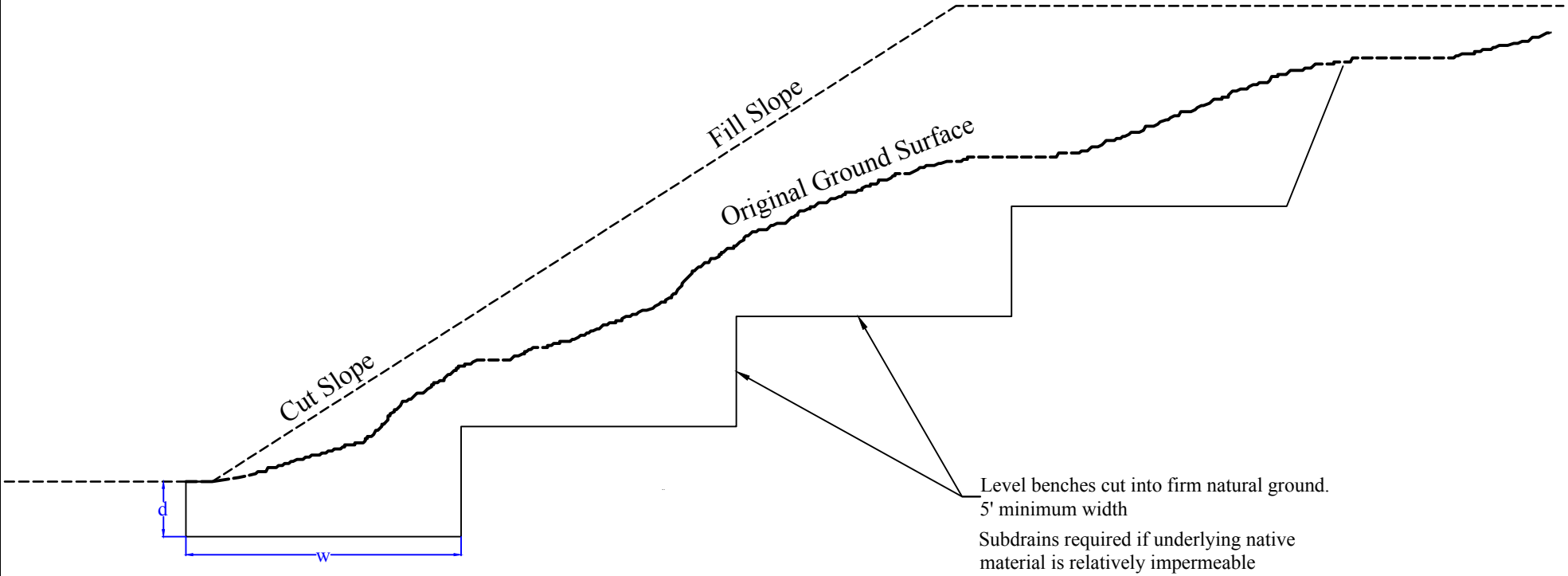
* Geologists * Construction Materials Testing

GN Northern, Inc.
Project No. 213-416

Cut/ Fill Detail: Reconstructed Cut Slope
Clearwater Creek
Richland, Washington

Date	Drawn By	Reviewed By	Figure
11/11/2013	YM	KAH	7B



Notes:
d = minimum downslope key depth into dense natural ground approved by the project engineering geologist or geotechnical engineer. 2' Minimum

w = Width of keyway: Half the slope height or 10' minimum

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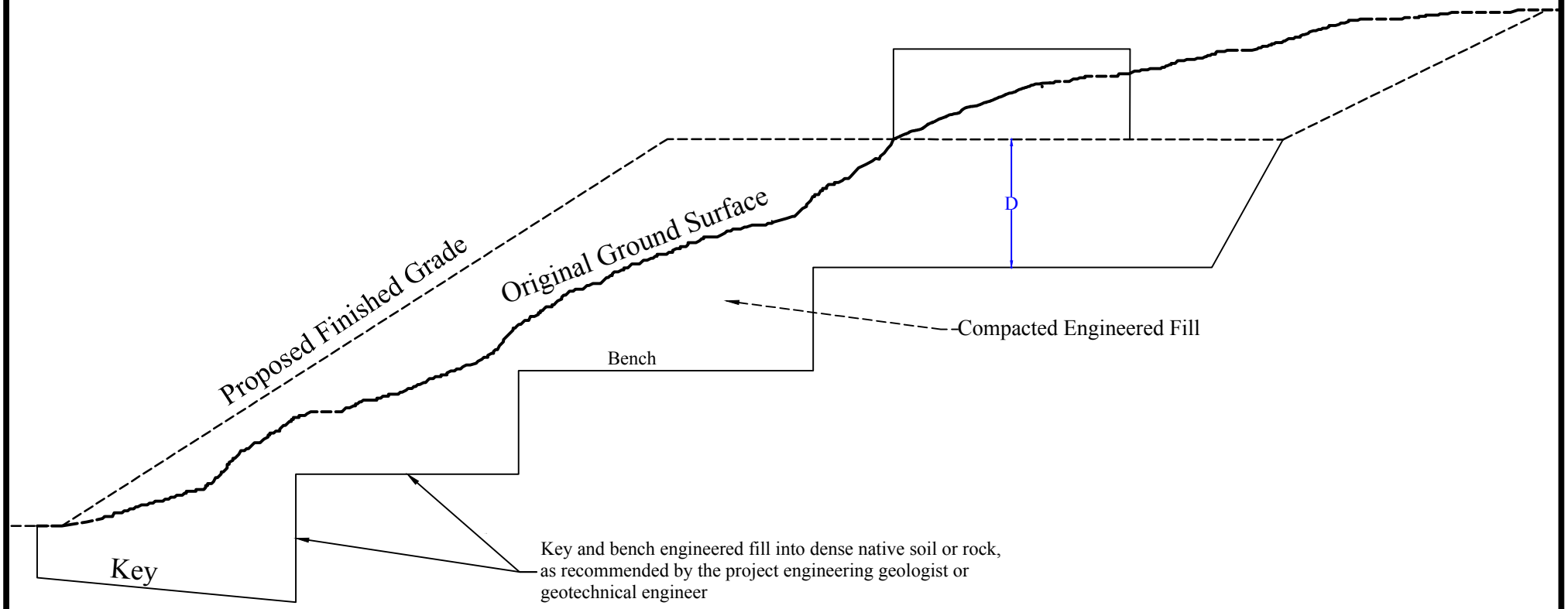
* Geologists * Construction Materials Testing

GN Northern, Inc.
Project No. 213-416

Cut/ Fill Detail: Fill Over Native Condition
Clearwater Creek
Richland, Washington

Date	Drawn By	Reviewed By	Figure
11/11/2013	YM	KAH	7C



Notes:
D = Depth of over-excavation and re-compaction as recommended in report. Minimum depth of fill under structure is 5'. maximum fill thickness differential ratio under structure is 3:1

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* Geologists * Construction Materials Testing

GN Northern, Inc.
Project No. 213-416

Over-Excavation Detail: Transition Condition
Clearwater Creek
Richland, Washington

Date	Drawn By	Reviewed By	Figure
11/11/2013	YM	KAH	7D

Appendix II

Exploratory Test-Pit Logs

Key Chart (for Soil Classification)

GN Northern
722 N. 16th Avenue, Suite 31
Yakima, WA 98902
Telephone: 509-248-9798
Fax: 509-248-4220

TEST PIT NUMBER TP-1

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/17/13 **COMPLETED** 9/17/13
GROUND ELEVATION ---
TEST PIT SIZE 18 x 180 inches
EXCAVATION CONTRACTOR Chinook Winds Construction
GROUND WATER LEVELS:
EXCAVATION METHOD Cat 420E Extendahoe
AT TIME OF EXCAVATION ---
LOGGED BY YM **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'44.50"N, 119°15'19.24"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				SANDY SILT, (ML) tan, dry to moist, loose
		ML		- intermittent layers of dense white ash
2.5				
4.0				SILTY SAND, (SM) light brown, fine grained, dry to moist, loose
5.0				
7.5		SM		- soil becomes light brown, loose to medium dense, trace gravel
10.0				
11.0				- Test-Pit terminated at approximately 11 ft, no groundwater encountered Bottom of test pit at 11.0 feet.

GN Northern
722 N. 16th Avenue, Suite 31
Yakima, WA 98902
Telephone: 509-248-9798
Fax: 509-248-4220

TEST PIT NUMBER TP-2

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/17/13 **COMPLETED** 9/17/13
GROUND ELEVATION ____ **TEST PIT SIZE** 18 x 180 inches
EXCAVATION CONTRACTOR Chinook Winds Construction
GROUND WATER LEVELS:
EXCAVATION METHOD Cat 420E Extendahoe
AT TIME OF EXCAVATION ---
LOGGED BY YM **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'44.59"N, 119°15'9.46"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				SANDY SILT, (ML) tan, dry to moist, loose
2.5		ML		
5.0				
7.5				
8.5				SILTY SAND, (SM) light brown, fine grained, dry to moist, loose to medium dense
10.0		SM		
11.0				- Test-Pit terminated at approximately 11 ft, no groundwater encountered Bottom of test pit at 11.0 feet.

GN Northern
722 N. 16th Avenue, Suite 31
Yakima, WA 98902
Telephone: 509-248-9798
Fax: 509-248-4220

TEST PIT NUMBER TP-3

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/17/13 **COMPLETED** 9/17/13
GROUND ELEVATION ---
TEST PIT SIZE 18 x 180 inches
EXCAVATION CONTRACTOR Chinook Winds Construction
GROUND WATER LEVELS:
EXCAVATION METHOD Cat 420E Extendahoe
AT TIME OF EXCAVATION ---
LOGGED BY YM **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'43.53"N, 119°15'6.22"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0		ML		SANDY SILT, (ML) tan, dry to moist, loose to medium dense
2.5				
5.0		SM		SILTY SAND, (SM) light brown, fine to medium grained, dry to moist, medium dense
7.5				
9.0		GP-GM		POORLY GRADED GRAVEL WITH SILT AND SAND, (GP-GM) brown to gray, dry to moist, medium dense to dense, trace cobbles
10.0				
11.0				- Test-Pit terminated at approximately 11 ft, no groundwater encountered Bottom of test pit at 11.0 feet.

GN Northern
722 N. 16th Avenue, Suite 31
Yakima, WA 98902
Telephone: 509-248-9798
Fax: 509-248-4220

TEST PIT NUMBER TP-4

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/17/13 **COMPLETED** 9/17/13
GROUND ELEVATION ---
TEST PIT SIZE 18 x 180 inches
EXCAVATION CONTRACTOR Chinook Winds Construction
GROUND WATER LEVELS:
EXCAVATION METHOD Cat 420E Extendahoe
AT TIME OF EXCAVATION ---
LOGGED BY YM **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'43.10"N, 119°15'10.14"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				SANDY SILT, (ML) tan, dry to moist, loose
2.5				
5.0		ML		
7.5				- soil becomes loose to medium dense
10.0				
11.0				- Test-Pit terminated at approximately 11 ft, no groundwater encountered Bottom of test pit at 11.0 feet.

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TEST PIT NUMBER TP-5

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/17/13 **COMPLETED** 9/17/13
GROUND ELEVATION ---- **TEST PIT SIZE** 18 x 180 inches
EXCAVATION CONTRACTOR Chinook Winds Construction
GROUND WATER LEVELS:
EXCAVATION METHOD Cat 420E Extendahoe
AT TIME OF EXCAVATION ---
LOGGED BY YM **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'43.38"N, 119°15'13.79"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				SANDY SILT, (ML) tan, dry to moist, loose
2.5				
5.0		ML		
7.5				- soil becomes loose to medium dense
10.0				
12.0				- Test-Pit terminated at approximately 12 ft, no groundwater encountered Bottom of test pit at 12.0 feet.

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TEST PIT NUMBER TP-6

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/17/13 **COMPLETED** 9/17/13
GROUND ELEVATION ---
TEST PIT SIZE 18 x 180 inches
EXCAVATION CONTRACTOR Chinook Winds Construction
GROUND WATER LEVELS:
EXCAVATION METHOD Cat 420E Extendahoe
AT TIME OF EXCAVATION ---
LOGGED BY YM **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'41.75"N, 119°15'17.88"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				SANDY SILT, (ML) tan, dry to moist, loose
2.5				
5.0		ML		
7.5				
				- soil becomes loose to medium dense
10.0				
11.0				- Test-Pit terminated at approximately 11 ft, no groundwater encountered Bottom of test pit at 11.0 feet.

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TEST PIT NUMBER TP-7

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/17/13 **COMPLETED** 9/17/13
GROUND ELEVATION ---
TEST PIT SIZE 18 x 180 inches
EXCAVATION CONTRACTOR Chinook Winds Construction
GROUND WATER LEVELS:
EXCAVATION METHOD Cat 420E Extendahoe
AT TIME OF EXCAVATION ---
LOGGED BY YM **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'41.10"N, 119°15'13.96"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				SANDY SILT, (ML) tan, dry to moist, loose
2.5				
5.0		ML		- 4 inch layer of dense white ash
7.5				
10.0				- soil becomes light brown, medium dense
12.0				- Test-Pit terminated at approximately 12 ft, no groundwater encountered Bottom of test pit at 12.0 feet.

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TEST PIT NUMBER TP-8

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/17/13 **COMPLETED** 9/17/13
GROUND ELEVATION ---
TEST PIT SIZE 18 x 180 inches
EXCAVATION CONTRACTOR Chinook Winds Construction
GROUND WATER LEVELS:
EXCAVATION METHOD Cat 420E Extendahoe
AT TIME OF EXCAVATION ---
LOGGED BY YM **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'40.88"N, 119°15'10.19"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				SANDY SILT, (ML) tan, dry to moist, loose
2.5				
5.0		ML		
7.5				
				- soil becomes loose to medium dense
10.0				
12.0				- Test-Pit terminated at approximately 12 ft, no groundwater encountered Bottom of test pit at 12.0 feet.

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TEST PIT NUMBER TP-9

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/17/13 **COMPLETED** 9/17/13
GROUND ELEVATION _____ **TEST PIT SIZE** 18 x 180 inches
EXCAVATION CONTRACTOR Chinook Winds Construction
GROUND WATER LEVELS:
EXCAVATION METHOD Cat 420E Extendahoe
AT TIME OF EXCAVATION ---
LOGGED BY YM **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'41.24"N, 119°15'6.22"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				SANDY SILT, (ML) tan, dry to moist, loose to medium dense
2.5				
		ML		
5.0				
7.5				
9.0				- Test-Pit terminated at approximately 9 ft, no groundwater encountered Bottom of test pit at 9.0 feet.

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TEST PIT NUMBER TP-10

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/17/13 **COMPLETED** 9/17/13
GROUND ELEVATION ____ **TEST PIT SIZE** 18 x 180 inches
EXCAVATION CONTRACTOR Chinook Winds Construction
GROUND WATER LEVELS:
EXCAVATION METHOD Cat 420E Extendahoe
AT TIME OF EXCAVATION ---
LOGGED BY YM **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'39.36"N, 119°15'2.28"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				SANDY SILT, (ML) tan, dry to moist, loose to medium dense
2.5				
5.0		ML		
7.5				
10.0				

- Test-Pit terminated at approximately 10 ft, no groundwater encountered
Bottom of test pit at 10.0 feet.

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TEST PIT NUMBER TP-11

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/17/13 **COMPLETED** 9/17/13
GROUND ELEVATION ---
TEST PIT SIZE 18 x 180 inches
EXCAVATION CONTRACTOR Chinook Winds Construction
GROUND WATER LEVELS:
EXCAVATION METHOD Cat 420E Extendahoe
AT TIME OF EXCAVATION ---
LOGGED BY YM **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'39.08"N, 119°15'6.21"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				SANDY SILT, (ML) tan, dry to moist, loose to medium dense
2.5				
5.0				
		ML		
7.5				
10.0				- soil becomes medium dense
12.5				
13.0				- Test-Pit terminated at approximately 13 ft, no groundwater encountered Bottom of test pit at 13.0 feet.

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TEST PIT NUMBER TP-12

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/17/13 **COMPLETED** 9/17/13
GROUND ELEVATION
TEST PIT SIZE 18 x 180 inches
EXCAVATION CONTRACTOR Chinook Winds Construction
GROUND WATER LEVELS:
EXCAVATION METHOD Cat 420E Extendahoe
AT TIME OF EXCAVATION ---
LOGGED BY YM **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'38.82"N, 119°15'10.27"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				SANDY SILT, (ML) tan, dry to moist, loose to medium dense
2.5				
5.0		ML		
7.5				
10.0				
10.5				- Test-Pit terminated at approximately 10.5 ft, no groundwater encountered Bottom of test pit at 10.5 feet.

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TEST PIT NUMBER TP-13

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/18/13 **COMPLETED** 9/18/13
GROUND ELEVATION ---
TEST PIT SIZE 18 x 180 inches
EXCAVATION CONTRACTOR Chinook Winds Construction
GROUND WATER LEVELS:
EXCAVATION METHOD Cat 420E Extendahoe
AT TIME OF EXCAVATION ---
LOGGED BY YM **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'38.75"N, 119°15'14.00"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				SANDY SILT, (ML) tan, dry to moist, loose
2.5		ML		
5.0				
7.0				SILTY SAND, (SM) light brown, fine grained, dry to moist, loose to medium dense
7.5		SM		
10.0				- Test-Pit terminated at approximately 10 ft, no groundwater encountered Bottom of test pit at 10.0 feet.

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TEST PIT NUMBER TP-14

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/18/13 **COMPLETED** 9/18/13
GROUND ELEVATION ---
TEST PIT SIZE 18 x 180 inches
EXCAVATION CONTRACTOR Chinook Winds Construction
GROUND WATER LEVELS:
EXCAVATION METHOD Cat 420E Extendahoe
AT TIME OF EXCAVATION ---
LOGGED BY YM **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'38.71"N, 119°15'18.08"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				SANDY SILT, (ML) tan, dry to moist, loose
2.5				
5.0		ML		
7.5				
9.0				SILTY SAND, (SM) light brown, fine grained, dry to moist, loose to medium dense
10.0		SM		
11.0				

- Test-Pit terminated at approximately 11 ft, no groundwater encountered
Bottom of test pit at 11.0 feet.

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TEST PIT NUMBER TP-15

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/18/13 **COMPLETED** 9/18/13
GROUND ELEVATION ---
TEST PIT SIZE 18 x 180 inches
EXCAVATION CONTRACTOR Chinook Winds Construction
GROUND WATER LEVELS:
EXCAVATION METHOD Cat 420E Extendahoe
AT TIME OF EXCAVATION ---
LOGGED BY YM **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'35.11"N, 119°15'18.41"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				SANDY SILT, (ML) tan, dry to moist, loose
2.5		ML		
5.0				
7.0				
7.5		SM		SILTY SAND, (SM) light brown, fine grained, dry to moist, loose to medium dense
10.0				- trace cobbles
10.5				- Test-Pit terminated at approximately 10.5 ft, no groundwater encountered Bottom of test pit at 10.5 feet.

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TEST PIT NUMBER TP-16

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/18/13 **COMPLETED** 9/18/13
GROUND ELEVATION ---
TEST PIT SIZE 18 x 180 inches
EXCAVATION CONTRACTOR Chinook Winds Construction
GROUND WATER LEVELS:
EXCAVATION METHOD Cat 420E Extendahoe
AT TIME OF EXCAVATION ---
LOGGED BY YM **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'36.61"N, 119°15'14.03"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	TESTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0					SANDY SILT, (ML) tan, dry to moist, loose
2.5			ML		
5.0					
7.5					
8.0					SILTY SAND, (SM) light brown, fine grained, dry to moist, loose to medium dense
10.0			SM		
11.0		MC = 4% Fines = 19%			- Test-Pit terminated at approximately 11 ft, no groundwater encountered Bottom of test pit at 11.0 feet.

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TEST PIT NUMBER TP-17

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/18/13 **COMPLETED** 9/18/13
GROUND ELEVATION ---
TEST PIT SIZE 18 x 180 inches
EXCAVATION CONTRACTOR Chinook Winds Construction
GROUND WATER LEVELS:
EXCAVATION METHOD Cat 420E Extendahoe
AT TIME OF EXCAVATION ---
LOGGED BY YM **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'37.11"N, 119°15'10.05"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				SANDY SILT, (ML) tan, dry to moist, loose
2.5		ML		
5.0				
7.0				
7.5		SM		SILTY SAND, (SM) light brown, fine grained, dry to moist, loose to medium dense
10.0				
11.0				

- Test-Pit terminated at approximately 11 ft, no groundwater encountered
Bottom of test pit at 11.0 feet.

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TEST PIT NUMBER TP-18

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/18/13 **COMPLETED** 9/18/13
GROUND ELEVATION ____ **TEST PIT SIZE** 18 x 180 inches
EXCAVATION CONTRACTOR Chinook Winds Construction
GROUND WATER LEVELS:
EXCAVATION METHOD Cat 420E Extendahoe
AT TIME OF EXCAVATION ---
LOGGED BY YM **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'37.28"N, 119°15'5.18"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				SANDY SILT, (ML) tan, dry to moist, loose
2.5		ML		
5.0				
6.0				SILTY SAND, (SM) light brown, fine grained, dry to moist, loose to medium dense
7.5		SM		
10.0				- Test-Pit terminated at approximately 10 ft, no groundwater encountered Bottom of test pit at 10.0 feet.

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TEST PIT NUMBER TP-19

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/18/13 **COMPLETED** 9/18/13
GROUND ELEVATION **TEST PIT SIZE** 18 x 180 inches
EXCAVATION CONTRACTOR Chinook Winds Construction
GROUND WATER LEVELS:
EXCAVATION METHOD Cat 420E Extendahoe
AT TIME OF EXCAVATION ---
LOGGED BY YM **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'34.54"N, 119°15'10.52"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				SANDY SILT, (ML) tan, dry to moist, loose
2.5		ML		
5.0				
6.0				SILTY SAND, (SM) light brown, fine grained, dry to moist, loose to medium dense
7.5		SM		
10.0				
10.5				- Test-Pit terminated at approximately 10.5 ft, no groundwater encountered Bottom of test pit at 10.5 feet.

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TEST PIT NUMBER TP-20

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/18/13 **COMPLETED** 9/18/13
GROUND ELEVATION ---
TEST PIT SIZE 18 x 180 inches
EXCAVATION CONTRACTOR Chinook Winds Construction
GROUND WATER LEVELS:
EXCAVATION METHOD Cat 420E Extendahoe
AT TIME OF EXCAVATION ---
LOGGED BY YM **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'33.48"N, 119°15'15.39"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				SANDY SILT, (ML) tan, dry to moist, loose
2.5				
5.0		ML		
7.5				
				- soil becomes loose to medium dense
10.0				
12.0				- Test-Pit terminated at approximately 12 ft, no groundwater encountered Bottom of test pit at 12.0 feet.

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TEST PIT NUMBER TP-21

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/18/13 **COMPLETED** 9/18/13
GROUND ELEVATION ____ **TEST PIT SIZE** 18 x 180 inches
EXCAVATION CONTRACTOR Chinook Winds Construction
GROUND WATER LEVELS:
EXCAVATION METHOD Cat 420E Extendahoe
AT TIME OF EXCAVATION ---
LOGGED BY YM **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'31.10"N, 119°15'20.40"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0		ML		SANDY SILT, (ML) tan, dry to moist, loose
2.5				
5.0				
7.5				
8.0		SM		SILTY SAND, (SM) light brown, fine grained, dry to moist, loose to medium dense
10.0				

- Test-Pit terminated at approximately 10 ft, no groundwater encountered
Bottom of test pit at 10.0 feet.

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TEST PIT NUMBER TP-22

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/18/13 **COMPLETED** 9/18/13
GROUND ELEVATION ____ **TEST PIT SIZE** 18 x 180 inches
EXCAVATION CONTRACTOR Chinook Winds Construction
GROUND WATER LEVELS:
EXCAVATION METHOD Cat 420E Extendahoe
AT TIME OF EXCAVATION ---
LOGGED BY YM **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'32.65"N, 119°15'22.04"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				SANDY SILT, (ML) tan, dry to moist, loose
2.5		ML		
5.0				
7.5				
8.0				SILTY SAND, (SM) light brown, dry to moist, loose to medium dense
		SM		
10.0				

- Test-Pit terminated at approximately 10 ft, no groundwater encountered
Bottom of test pit at 10.0 feet.

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TEST PIT NUMBER TP-23

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/18/13 **COMPLETED** 9/18/13
GROUND ELEVATION ---
TEST PIT SIZE 18 x 180 inches
EXCAVATION CONTRACTOR Chinook Winds Construction
GROUND WATER LEVELS:
EXCAVATION METHOD Cat 420E Extendahoe
AT TIME OF EXCAVATION ---
LOGGED BY YM **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'31.43"N, 119°15'25.20"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				SANDY SILT, (ML) tan, dry to moist, loose
2.5				
5.0		ML		
7.5				- soil becomes loose to medium dense
10.0				

- Test-Pit terminated at approximately 10 ft, no groundwater encountered
Bottom of test pit at 10.0 feet.

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TEST PIT NUMBER TP-24

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/18/13 **COMPLETED** 9/18/13
GROUND ELEVATION ____ **TEST PIT SIZE** 18 x 180 inches
EXCAVATION CONTRACTOR Chinook Winds Construction
GROUND WATER LEVELS:
EXCAVATION METHOD Cat 420E Extendahoe
AT TIME OF EXCAVATION ---
LOGGED BY YM **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'30.00"N, 119°15'28.44"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				SANDY SILT, (ML) tan, dry to moist, loose
2.5		ML		
5.0				
7.5				
8.0				SILTY SAND, (SM) light brown, fine grained, dry to moist, loose to medium dense
		SM		
10.0				

- Test-Pit terminated at approximately 10 ft, no groundwater encountered
Bottom of test pit at 10.0 feet.

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TEST PIT NUMBER TP-25

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/18/13 **COMPLETED** 9/18/13
GROUND ELEVATION ____ **TEST PIT SIZE** 18 x 180 inches
EXCAVATION CONTRACTOR Chinook Winds Construction
GROUND WATER LEVELS:
EXCAVATION METHOD Cat 420E Extendahoe
AT TIME OF EXCAVATION ---
LOGGED BY YM **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'28.81"N, 119°15'31.54"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				SANDY SILT, (ML) tan, dry to moist, loose
2.5		ML		
5.0				
7.5				
8.0				SILTY SAND, (SM) light brown, fine grained, dry to moist, loose to medium dense
		SM		
10.0				

- Test-Pit terminated at approximately 10 ft, no groundwater encountered
Bottom of test pit at 10.0 feet.

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TEST PIT NUMBER TP-26

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/18/13 **COMPLETED** 9/18/13
GROUND ELEVATION ---
TEST PIT SIZE 18 x 180 inches
EXCAVATION CONTRACTOR Chinook Winds Construction
GROUND WATER LEVELS:
EXCAVATION METHOD Cat 420E Extendahoe
AT TIME OF EXCAVATION ---
LOGGED BY YM **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'27.53"N, 119°15'34.07"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	TESTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0					SANDY SILT, (ML) tan, dry to moist, loose
2.5			ML		
5.0		MC = 4% Fines = 63%			
7.5					
8.0					SILTY SAND, (SM) light brown, fine grained, dry to moist, loose to medium dense
			SM		
10.0					- Test-Pit terminated at approximately 10 ft, no groundwater encountered Bottom of test pit at 10.0 feet.

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TEST PIT NUMBER TP-27

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/18/13 **COMPLETED** 9/18/13
GROUND ELEVATION ____ **TEST PIT SIZE** 18 x 180 inches
EXCAVATION CONTRACTOR Chinook Winds Construction
GROUND WATER LEVELS:
EXCAVATION METHOD Cat 420E Extendahoe
AT TIME OF EXCAVATION ---
LOGGED BY YM **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'28.22"N, 119°15'17.51"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				SILTY SAND, (SM) tan, fine grained, dry to moist, loose
2.5				
5.0		SM		
7.5				- soil becomes light brown, loose to medium dense
10.0				
11.0				- Test-Pit terminated at approximately 11 ft, no groundwater encountered Bottom of test pit at 11.0 feet.

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TEST PIT NUMBER TP-28

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/18/13 **COMPLETED** 9/18/13
GROUND ELEVATION ---
TEST PIT SIZE 18 x 180 inches
EXCAVATION CONTRACTOR Chinook Winds Construction
GROUND WATER LEVELS:
EXCAVATION METHOD Cat 420E Extendahoe
AT TIME OF EXCAVATION ---
LOGGED BY YM **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'26.36"N, 119°15'16.08"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				SILTY SAND, (ML) tan, fine grained, dry to moist, loose
2.5				
5.0		ML		
7.5				- soil becomes light brown, loose to medium dense
10.0				

- Test-Pit terminated at approximately 10 ft, no groundwater encountered
Bottom of test pit at 10.0 feet.

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TEST PIT NUMBER TP-29

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/18/13 **COMPLETED** 9/18/13
GROUND ELEVATION ---
TEST PIT SIZE 18 x 180 inches
EXCAVATION CONTRACTOR Chinook Winds Construction
GROUND WATER LEVELS:
EXCAVATION METHOD Cat 420E Extendahoe
AT TIME OF EXCAVATION ---
LOGGED BY YM **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'25.81"N, 119°15'12.91"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				SANDY SILT, (ML) tan, dry to moist, loose to medium dense
2.5				- 2 inch layer of dense white ash
5.0		ML		
7.5				- soil becomes medium dense to dense
				- trace gravel
10.0				- Test-Pit terminated at approximately 10 ft, no groundwater encountered Bottom of test pit at 10.0 feet.

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TEST PIT NUMBER TP-30

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/19/13 **COMPLETED** 9/19/13
GROUND ELEVATION ____ **TEST PIT SIZE** 18 x 180 inches
EXCAVATION CONTRACTOR Chinook Winds Construction
GROUND WATER LEVELS:
EXCAVATION METHOD Cat 420E Extendahoe
AT TIME OF EXCAVATION ---
LOGGED BY YM **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'27.58"N, 119°15'11.88"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				
		SM		SILTY SAND, (SM) light brown, fine grained, dry to moist, loose
2.5				
5.0				
6.0				
		ML		SANDY SILT, (ML) tan, dry to moist, loose to medium dense
7.5				
10.0				

- Test-Pit terminated at approximately 10 ft, no groundwater encountered
Bottom of test pit at 10.0 feet.

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TEST PIT NUMBER TP-31

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/19/13 **COMPLETED** 9/19/13
GROUND ELEVATION ____ **TEST PIT SIZE** 18 x 180 inches
EXCAVATION CONTRACTOR Chinook Winds Construction
GROUND WATER LEVELS:
EXCAVATION METHOD Cat 420E Extendahoe
AT TIME OF EXCAVATION ---
LOGGED BY YM **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'30.08"N, 119°15'13.21"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				(ML)
2.5				- intermittent layers of dense white ash
5.0		ML		
7.5				- soil becomes loose to medium dense
10.0				- Test-Pit terminated at approximately 10 ft, no groundwater encountered Bottom of test pit at 10.0 feet.

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TEST PIT NUMBER TP-32

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/19/13 **COMPLETED** 9/19/13
GROUND ELEVATION ---
TEST PIT SIZE 18 x 180 inches
EXCAVATION CONTRACTOR Chinook Winds Construction
GROUND WATER LEVELS:
EXCAVATION METHOD Cat 420E Extendahoe
AT TIME OF EXCAVATION ---
LOGGED BY YM **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'31.17"N, 119°15'9.47"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0		SM		SILTY SAND, (SM) light brown, fine grained, dry to moist, loose - intermittent layers of dense white ash
2.5				
3.0		ML		SANDY SILT, (ML) tan, dry, loose to medium dense
5.0				
7.5				
10.0				

- Test-Pit terminated at approximately 10 ft, no groundwater encountered
Bottom of test pit at 10.0 feet.

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TEST PIT NUMBER TP-33

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/19/13 **COMPLETED** 9/19/13
GROUND ELEVATION ---
TEST PIT SIZE 18 x 180 inches
EXCAVATION CONTRACTOR Chinook Winds Construction
GROUND WATER LEVELS:
EXCAVATION METHOD Cat 420E Extendahoe
AT TIME OF EXCAVATION ---
LOGGED BY YM **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'28.89"N, 119°15'8.34"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	TESTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0					SANDY SILT, (ML) tan, dry to moist, loose
2.5			ML		- intermittent layers of dense white ash
5.0					
7.5					
8.0					SILTY SAND, (SM) light brown, fine grained, dry to moist, loose to medium dense
		MC = 5% Fines = 47%	SM		
10.0					- Test-Pit terminated at approximately 10 ft, no groundwater encountered Bottom of test pit at 10.0 feet.

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TEST PIT NUMBER TP-34

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/19/13 **COMPLETED** 9/19/13
GROUND ELEVATION ---
TEST PIT SIZE 18 x 180 inches
EXCAVATION CONTRACTOR Chinook Winds Construction
GROUND WATER LEVELS:
EXCAVATION METHOD Cat 420E Extendahoe
AT TIME OF EXCAVATION ---
LOGGED BY YM **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'26.62"N, 119°15'7.27"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				SANDY SILT, (ML) tan, dry to moist, loose
2.5		ML		- intermittent layers of dense white ash
5.0				
7.0				
7.5		SM		SILTY SAND, (SM) light brown, fine grained, dry, loose to medium dense
10.0				

- Test-Pit terminated at approximately 10 ft, no groundwater encountered
Bottom of test pit at 10.0 feet.

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TEST PIT NUMBER TP-35

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/19/13 **COMPLETED** 9/19/13
GROUND ELEVATION ____ **TEST PIT SIZE** 18 x 180 inches
EXCAVATION CONTRACTOR Chinook Winds Construction
GROUND WATER LEVELS:
EXCAVATION METHOD Cat 420E Extendahoe
AT TIME OF EXCAVATION ---
LOGGED BY YM **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'27.59"N, 119°15'2.01"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				SANDY SILT, (ML) light brown, dry to moist, loose
				- intermittent layers of dense white ash
2.5				
5.0		ML		
7.5				- soil becomes loose to medium dense
10.0				

- Test-Pit terminated at approximately 10 ft, no groundwater encountered
Bottom of test pit at 10.0 feet.

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TEST PIT NUMBER TP-36

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/19/13 **COMPLETED** 9/19/13
GROUND ELEVATION ---
TEST PIT SIZE 18 x 180 inches
EXCAVATION CONTRACTOR Chinook Winds Construction
GROUND WATER LEVELS:
EXCAVATION METHOD Cat 420E Extendahoe
AT TIME OF EXCAVATION ---
LOGGED BY YM **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'29.91"N, 119°15'4.97"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				SILTY SAND, (SM) tan to light brown, fine grained, dry to moist, loose
2.5				
5.0		SM		
7.5				- soil becomes loose to medium dense
10.0				

- Test-Pit terminated at approximately 10 ft, no groundwater encountered
Bottom of test pit at 10.0 feet.

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TEST PIT NUMBER TP-37

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/19/13 **COMPLETED** 9/19/13
GROUND ELEVATION ____ **TEST PIT SIZE** 18 x 180 inches
EXCAVATION CONTRACTOR Chinook Winds Construction
GROUND WATER LEVELS:
EXCAVATION METHOD Cat 420E Extendahoe
AT TIME OF EXCAVATION ---
LOGGED BY YM **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'32.48"N, 119°15'5.93"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				SANDY SILT, (ML) tan to light brown, dry to moist, loose
				- intermittent layers of dense white ash
2.5				
5.0		ML		
7.5				- soil becomes loose to medium dense
10.0				

- Test-Pit terminated at approximately 10 ft, no groundwater encountered
Bottom of test pit at 10.0 feet.

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TEST PIT NUMBER TP-38

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/19/13 **COMPLETED** 9/19/13
GROUND ELEVATION ---
TEST PIT SIZE 18 x 180 inches
EXCAVATION CONTRACTOR Chinook Winds Construction
GROUND WATER LEVELS:
EXCAVATION METHOD Cat 420E Extendahoe
AT TIME OF EXCAVATION ---
LOGGED BY YM **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'34.91"N, 119°15'3.16"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				SANDY SILT, (ML) tan, dry to moist, loose
				- intermittent layers of dense white ash
2.5				
		ML		
5.0				
7.5				
				8.5
				SILTY SAND, (SM) light brown, fine grained, dry to moist, loose to medium dense
		SM		
10.0				
				10.5
				- Test-Pit terminated at approximately 10.5 ft, no groundwater encountered Bottom of test pit at 10.5 feet.

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TEST PIT NUMBER TP-39

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/20/13 **COMPLETED** 9/20/13
GROUND ELEVATION ---
TEST PIT SIZE 18 x 180 inches
EXCAVATION CONTRACTOR Chinook Winds Construction
GROUND WATER LEVELS:
EXCAVATION METHOD Cat 420E Extendahoe
AT TIME OF EXCAVATION ---
LOGGED BY YM **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'32.42"N, 119°15'2.02"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				SANDY SILT, (ML) tan, dry to moist, loose
2.5				
5.0		ML		
7.5				- soil becomes light brown, loose to medium dense
10.0				
11.0				- Test-Pit terminated at approximately 11 ft, no groundwater encountered Bottom of test pit at 11.0 feet.

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TEST PIT NUMBER TP-40

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/20/13 **COMPLETED** 9/20/13
GROUND ELEVATION ---
TEST PIT SIZE 18 x 180 inches
EXCAVATION CONTRACTOR Chinook Winds Construction
GROUND WATER LEVELS:
EXCAVATION METHOD Cat 420E Extendahoe
AT TIME OF EXCAVATION ---
LOGGED BY YM **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'30.07"N, 119°15'1.07"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				SANDY SILT, (ML) tan, dry to moist, loose
2.5		ML		- intermittent layers of dense white ash
5.0				
7.5			7.5	
		SM		SILTY SAND, (SM) light brown, fine grained, dry, loose to medium dense
10.0			10.0	

- Test-Pit terminated at approximately 10 ft, no groundwater encountered
Bottom of test pit at 10.0 feet.

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TEST PIT NUMBER TP-41

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/20/13 **COMPLETED** 9/20/13
GROUND ELEVATION ---
TEST PIT SIZE 18 x 180 inches
EXCAVATION CONTRACTOR Chinook Winds Construction
GROUND WATER LEVELS:
EXCAVATION METHOD Cat 420E Extendahoe
AT TIME OF EXCAVATION ---
LOGGED BY YM **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'30.04"N, 119°14'56.94"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				SANDY SILT, (ML) tan, dry to moist, loose
2.5		ML		- intermittent layers of dense white ash
5.0				
6.5				SILTY SAND, (SM) light brown, fine grained, dry to moist, loose to medium dense
7.5		SM		
10.0				
11.0				- Test-Pit terminated at approximately 11 ft, no groundwater encountered Bottom of test pit at 11.0 feet.

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TEST PIT NUMBER TP-42

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/20/13 **COMPLETED** 9/20/13
GROUND ELEVATION ---
TEST PIT SIZE 18 x 180 inches
EXCAVATION CONTRACTOR Chinook Winds Construction
GROUND WATER LEVELS:
EXCAVATION METHOD Cat 420E Extendahoe
AT TIME OF EXCAVATION ---
LOGGED BY YM **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'33.40"N, 119°14'58.47"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				SANDY SILT, (ML) tan, dry to moist, loose
2.5				
				- intermittent layers of dense white ash
		ML		
5.0				
7.5				
8.0				
		SM		SILTY SAND, (SM) light brown, fine grained, dry to moist, loose to medium dense
10.0				
10.5				

- Test-Pit terminated at approximately 10.5 ft, no groundwater encountered
Bottom of test pit at 10.5 feet.

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TEST PIT NUMBER TP-43

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/20/13 **COMPLETED** 9/20/13
GROUND ELEVATION ---
TEST PIT SIZE 18 x 180 inches
EXCAVATION CONTRACTOR Chinook Winds Construction
GROUND WATER LEVELS:
EXCAVATION METHOD Cat 420E Extendahoe
AT TIME OF EXCAVATION ---
LOGGED BY YM **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'36.58"N, 119°15'0.01"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				SANDY SILT, (ML) tan, dry to moist, loose
				- intermittent layers of dense white ash
2.5				
		ML		
5.0				
7.5				
8.0				
		SM		SILTY SAND, (SM) light brown, fine grained, dry, loose to medium dense
10.0				
10.5				

- Test-Pit terminated at approximately 10.5 ft, no groundwater encountered
Bottom of test pit at 10.5 feet.

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TEST PIT NUMBER TP-44

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/20/13 **COMPLETED** 9/20/13
GROUND ELEVATION ____ **TEST PIT SIZE** 18 x 180 inches
EXCAVATION CONTRACTOR Chinook Winds Construction
GROUND WATER LEVELS:
EXCAVATION METHOD Cat 420E Extendahoe
AT TIME OF EXCAVATION ---
LOGGED BY YM **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'38.19"N, 119°14'56.88"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				SILTY SAND, (SM) tan, fine grained, dry to moist, loose
2.5				
5.0		SM		
7.5				- soil becomes light brown, loose to medium dense
10.0				
10.5				- Test-Pit terminated at approximately 10.5 ft, no groundwater encountered Bottom of test pit at 10.5 feet.

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TEST PIT NUMBER TP-45

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/20/13 **COMPLETED** 9/20/13
GROUND ELEVATION ____ **TEST PIT SIZE** 18 x 180 inches
EXCAVATION CONTRACTOR Chinook Winds Construction
GROUND WATER LEVELS:
EXCAVATION METHOD Cat 420E Extendahoe
AT TIME OF EXCAVATION ---
LOGGED BY YM **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'34.50"N, 119°14'55.14"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				SANDY SILT, (ML) tan, dry to moist, loose
				- intermittent layers of dense white ash
2.5				
5.0		ML		
7.5				- soil becomes loose to medium dense
10.0				

- Test-Pit terminated at approximately 10 ft, no groundwater encountered
Bottom of test pit at 10.0 feet.

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TEST PIT NUMBER TP-46

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/20/13 **COMPLETED** 9/20/13
GROUND ELEVATION ____ **TEST PIT SIZE** 18 x 180 inches
EXCAVATION CONTRACTOR Chinook Winds Construction
GROUND WATER LEVELS:
EXCAVATION METHOD Cat 420E Extendahoe
AT TIME OF EXCAVATION ---
LOGGED BY YM **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'31.04"N, 119°14'53.52"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				SANDY SILT, (ML) tan, dry to moist, loose
2.5				
5.0		ML		
7.5				- intermittent layers of dense white ash
10.0				- soil becomes loose to medium dense
11.0				- Test-Pit terminated at approximately 11 ft, no groundwater encountered Bottom of test pit at 11.0 feet.

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TEST PIT NUMBER TP-47

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/20/13 **COMPLETED** 9/20/13
GROUND ELEVATION ---
TEST PIT SIZE 18 x 180 inches
EXCAVATION CONTRACTOR Chinook Winds Construction
GROUND WATER LEVELS:
EXCAVATION METHOD Cat 420E Extendahoe
AT TIME OF EXCAVATION ---
LOGGED BY YM **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'32.45"N, 119°14'49.66"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	TESTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0					SILTY SAND, (SM) tan, fine grained, dry, loose
2.5		MC = 2% Fines = 29%	SM		
5.0					
7.5					- soil becomes light brown, loose to medium dense
10.0					

- Test-Pit terminated at approximately 10 ft, no groundwater encountered
Bottom of test pit at 10.0 feet.

GN Northern
722 N. 16th Avenue, Suite 31
Yakima, WA 98902
Telephone: 509-248-9798
Fax: 509-248-4220

TEST PIT NUMBER TP-48

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/27/13 **COMPLETED** 9/27/13
GROUND ELEVATION ---
TEST PIT SIZE 4 inches
EXCAVATION CONTRACTOR ---
GROUND WATER LEVELS:
EXCAVATION METHOD Hand Auger
AT TIME OF EXCAVATION ---
LOGGED BY KH **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'34.91"N, 119°14'51.42"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				SILTY SAND, (SM) light brown, fine grained, dry, loose
2.5		SM		- soil becomes dry to moist, loose to medium dense
5.0				
5.5				- Test hole terminated at approximately 5.5 ft, no groundwater encountered Bottom of test pit at 5.5 feet.

GN Northern
722 N. 16th Avenue, Suite 31
Yakima, WA 98902
Telephone: 509-248-9798
Fax: 509-248-4220

TEST PIT NUMBER TP-49

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/27/13 **COMPLETED** 9/27/13
GROUND ELEVATION ---
TEST PIT SIZE 4 inches
EXCAVATION CONTRACTOR ---
GROUND WATER LEVELS:
EXCAVATION METHOD Hand Auger
AT TIME OF EXCAVATION ---
LOGGED BY KH **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'38.11"N, 119°14'52.83"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				SILTY SAND, (SM) light brown, fine grained, dry, loose
2.5		SM		- soil becomes dry to moist, loose to medium dense
5.0				
5.5				- Test hole terminated at approximately 5.5 ft, no groundwater encountered Bottom of test pit at 5.5 feet.

GN Northern
722 N. 16th Avenue, Suite 31
Yakima, WA 98902
Telephone: 509-248-9798
Fax: 509-248-4220

TEST PIT NUMBER TP-50

CLIENT Hayden Homes
PROJECT NAME Clearwater Creek
PROJECT NUMBER 213-416
PROJECT LOCATION Richland, WA
DATE STARTED 9/27/13 **COMPLETED** 9/27/13
GROUND ELEVATION **TEST PIT SIZE** 4 inches
EXCAVATION CONTRACTOR
GROUND WATER LEVELS:
EXCAVATION METHOD Hand Auger
AT TIME OF EXCAVATION ---
LOGGED BY KH **CHECKED BY** KH
AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46°12'44.11"N, 119°14'54.17"W
AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				POORLY GRADED SAND WITH SILT, (SP-SM) gray, fine to medium grained, dry, loose to medium dense
2.5		SP-SM		- soil becomes dry to moist
5.0				- Test hole terminated at approximately 5 ft, no groundwater encountered Bottom of test pit at 5.0 feet.

Northern, Inc.
Kennewick, Yakima, Spokane, Hermiston (OR)

KEY CHART

RELATIVE DENSITY OR CONSISTENCY VERSUS SPT N-VALUE

COARSE-GRAINED SOILS			FINE-GRAINED SOILS		
DENSITY	N (BLOWS/FT)	FIELD TEST	CONSISTENCY	N (BLOWS/FT)	FIELD TEST
Very Loose	0 – 4	Easily penetrated with ½-inch reinforcing rod pushed by hand	Very Soft	0 – 2	Easily penetrated several inches by thumb
Loose	4 – 10	Difficult to penetrate with ½-inch reinforcing rod pushed by hand	Soft	2 – 4	Easily penetrated one inch by thumb
Medium -Dense	10 – 30	Easily penetrated with ½-inch rod driven with a 5-lb hammer	Medium-Stiff	4 – 8	Penetrated over ½-inch by thumb with moderate effort
Dense	30 – 50	Difficult to penetrate with ½-inch rod driven with a 5-lb hammer	Stiff	8 – 15	Indented about ½-inch by thumb but penetrated with great effort
Very Dense	> 50	penetrated only a few inches with ½-inch rod driven with a 5-lb hammer	Very Stiff	15 – 30	Readily indented by thumb
			Hard	> 30	Indented with difficulty by thumbnail

USCS SOIL CLASSIFICATION

MAJOR DIVISIONS			GROUP DESCRIPTION	
Coarse-Grained Soils <50% passes #200 sieve	**Gravel** and **Gravelly Soils** <50% coarse fraction passes #4 sieve	**Gravel** (with little or no fines)	GW	Well-graded **Gravel**
			GP	Poorly Graded **Gravel**
		Gravel (with >12% fines)	GM	Silty **Gravel**
			GC	Clayey **Gravel**
	Sand and **Sandy Soils** >50% coarse fraction passes #4 sieve	**Sand** (with little or no fines)	SW	Well-graded **Sand**
			SP	Poorly graded **Sand**
		Sand (with >12% fines)	SM	Silty **Sand**
			SC	Clayey **Sand**
Fine-Grained Soils >50% passes #200 sieve	**Silt** and **Clay** Liquid Limit < 50		ML	**Silt**
			CL	Lean **Clay**
			OL	Organic **Silt** and **Clay** (low plasticity)
	Silt and **Clay** Liquid Limit > 50		MH	Inorganic **Silt**
			CH	Inorganic **Clay**
			OH	Organic **Clay** and **Silt** (med. to high plasticity)
Highly Organic Soils			PT	**Peat**
				Top Soil

LOG SYMBOLS

	2S	2" OD Split Spoon (SPT)
	3S	3" OD Split Spoon
	NS	Non-Standard Split Spoon
	ST	Shelby Tube
	CR	Core Run
	BG	Bag Sample
	TV	Torvane Reading
	PP	Penetrometer Reading
	NR	No Recovery
	GW	Groundwater Table

MODIFIERS

DESCRIPTION	RANGE
Trace	<5%
Little	5% – 12%
Some	>12%

MOISTURE CONTENT

DESCRIPTION	FIELD OBSERVATION
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but not visible water
Wet	Visible free water

SOIL CLASSIFICATION INCLUDES

1. Group Name
2. Group Symbol
3. Color
4. Moisture content
5. Density / consistency
6. Cementation
7. Particle size (if applicable)
8. Odor (if present)
9. Comments

MAJOR DIVISIONS WITH GRAIN SIZE

SIEVE SIZE						
12"	3"	3/4"	4	10	40	200
GRAIN SIZE (INCHES)						
12	3	0.75	0.19	0.079	0.0171	0.0029

Boulders	Cobbles	Gravel		Sand			Silt and Clay
		Coarse	Fine	Coarse	Medium	Fine	

Conditions shown on boring and testpit logs represent our observations at the time and location of the fieldwork, modifications based on lab test, analysis, and geological and engineering judgment. These conditions may not exist at other times and locations, even in close proximity thereof. This information was gathered as part of our investigation, and we are not responsible for any use or interpretation of the information by others.

Appendix III

Site & Exploration Photographs

Typical trail in southern portion of site, looking east

View of site from center of site, looking north

Abandoned railroad track easement through center of site, looking southeast

View of site from south-eastern portion, looking west

Northern, Inc.

Job Number: 213-416

Site & Exploration Photos
Clearwater Creek – Residential Development
Richland, Washington

Date	Mounted By:	Reviewed By:	Plate
11-11-13	YM	KH	1

View of site from central portion, looking southwest along transmission line

View of site from south-central portion, looking south

View of site from top of fill berm to the south, looking northeast

View of site from fill berm to the south, looking east

Northern, Inc.	**Site & Exploration Photos** Clearwater Creek – Residential Development Richland, Washington			
Job Number: 213-416	Date 11-11-13	Mounted By: YM	Reviewed By: KH	Plate 2

Soils inside Test-Pit 3 (TP-3)

Soils inside Test-Pit 35 (TP-35)

Soil cuttings from Test-Pit 38 (TP-38)

Soil cuttings from Test-Pit 10 (TP-10)

Northern, Inc.

Job Number: 213-416

Site & Exploration Photos
Clearwater Creek – Residential Development
Richland, Washington

Date	Mounted By:	Reviewed By:	Plate
11-11-13	YM	KH	3

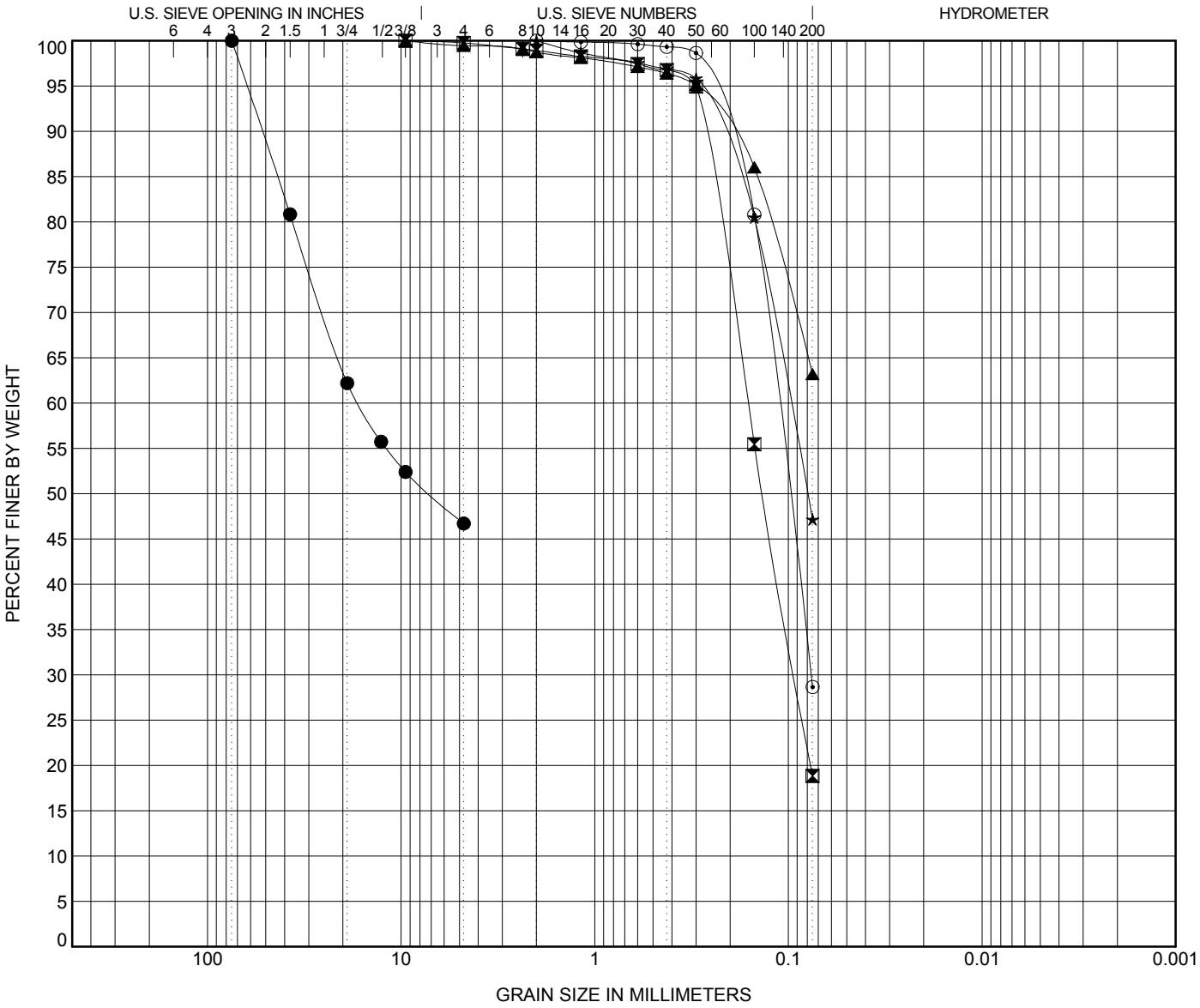
Appendix IV
Laboratory Testing Results

GN Northern
722 N. 16th Avenue, Suite 31
Yakima, WA 98902
Telephone: 509-248-9798
Fax: 509-248-4220

GRAIN SIZE DISTRIBUTION

CLIENT Hayden Homes **PROJECT NAME** Clearwater Creek

PROJECT NUMBER 213-416 **PROJECT LOCATION** Richland, WA



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	**TP-3**	**9.0**	**Sandy Gravel (GP)**					
⊠	**TP-16**	**11.0**	**Silty Sand (SM)**					
▲	**TP-26**	**5.0**	**Sandy Silt (ML)**					
★	**TP-33**	**9.0**	**Silty Sand (SM)**					
⊙	**TP-47**	**4.0**	**Silty Sand (SM)**					

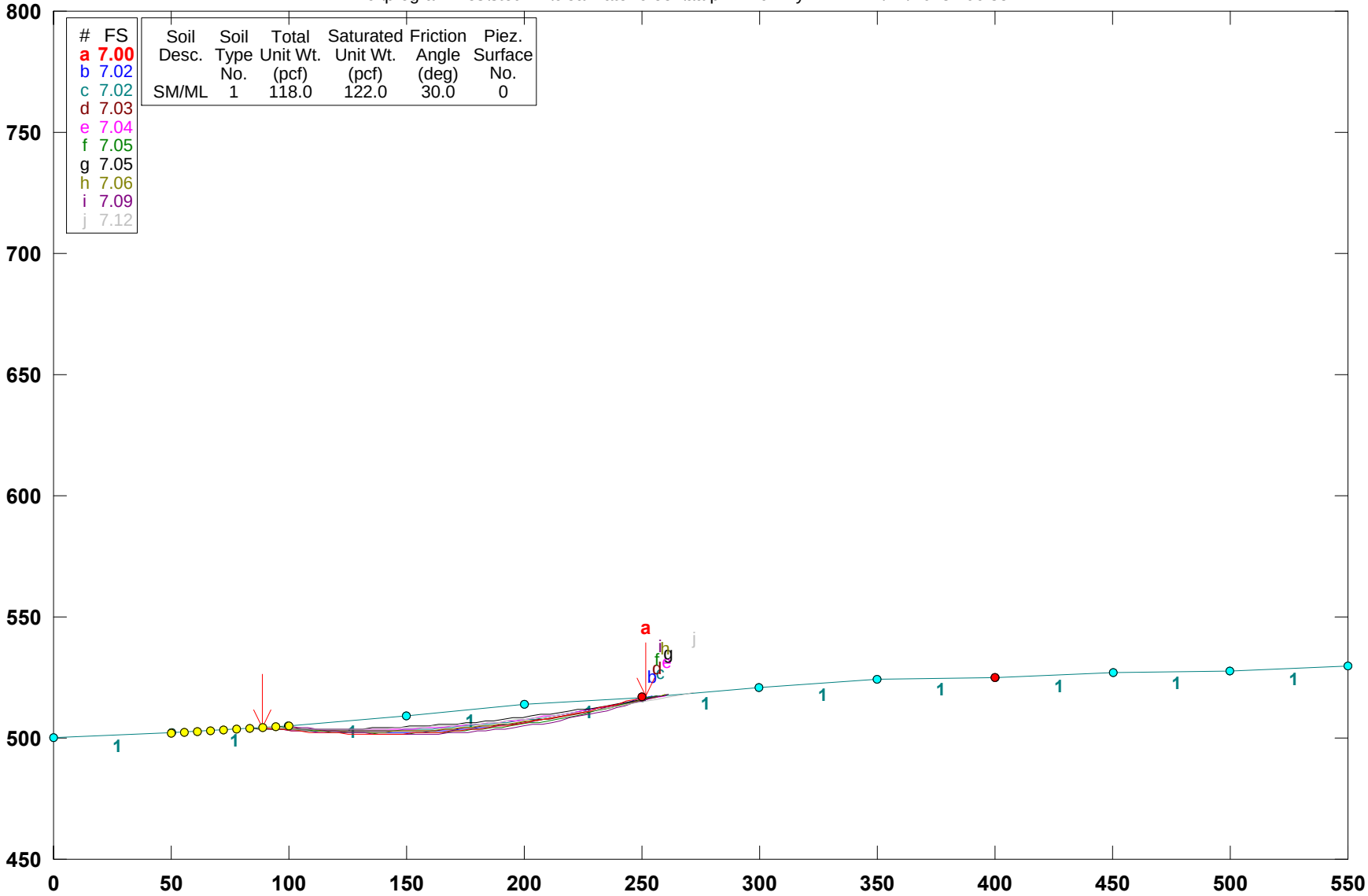
	BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**TP-3**	**9.0**	**75**	**16.568**			**53.3**			
⊠	**TP-16**	**11.0**	**9.5**	**0.162**	**0.093**		**0.3**	**80.9**	**18.8**	
▲	**TP-26**	**5.0**	**9.5**				**0.6**	**36.2**	**63.2**	
★	**TP-33**	**9.0**	**2**	**0.098**			**0.0**	**52.8**	**47.2**	
⊙	**TP-47**	**4.0**	**2**	**0.114**	**0.076**		**0.0**	**71.3**	**28.7**	

Appendix V

Slope Stability Analysis

Clearwater Creek - Existing Slope - Section A-A' - Static

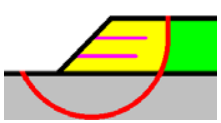
c:\program files\stedwin\clearwater creek\aa.pl2 Run By: KAH 11/14/2013 06:35PM



STABL6H FSmin=7.00

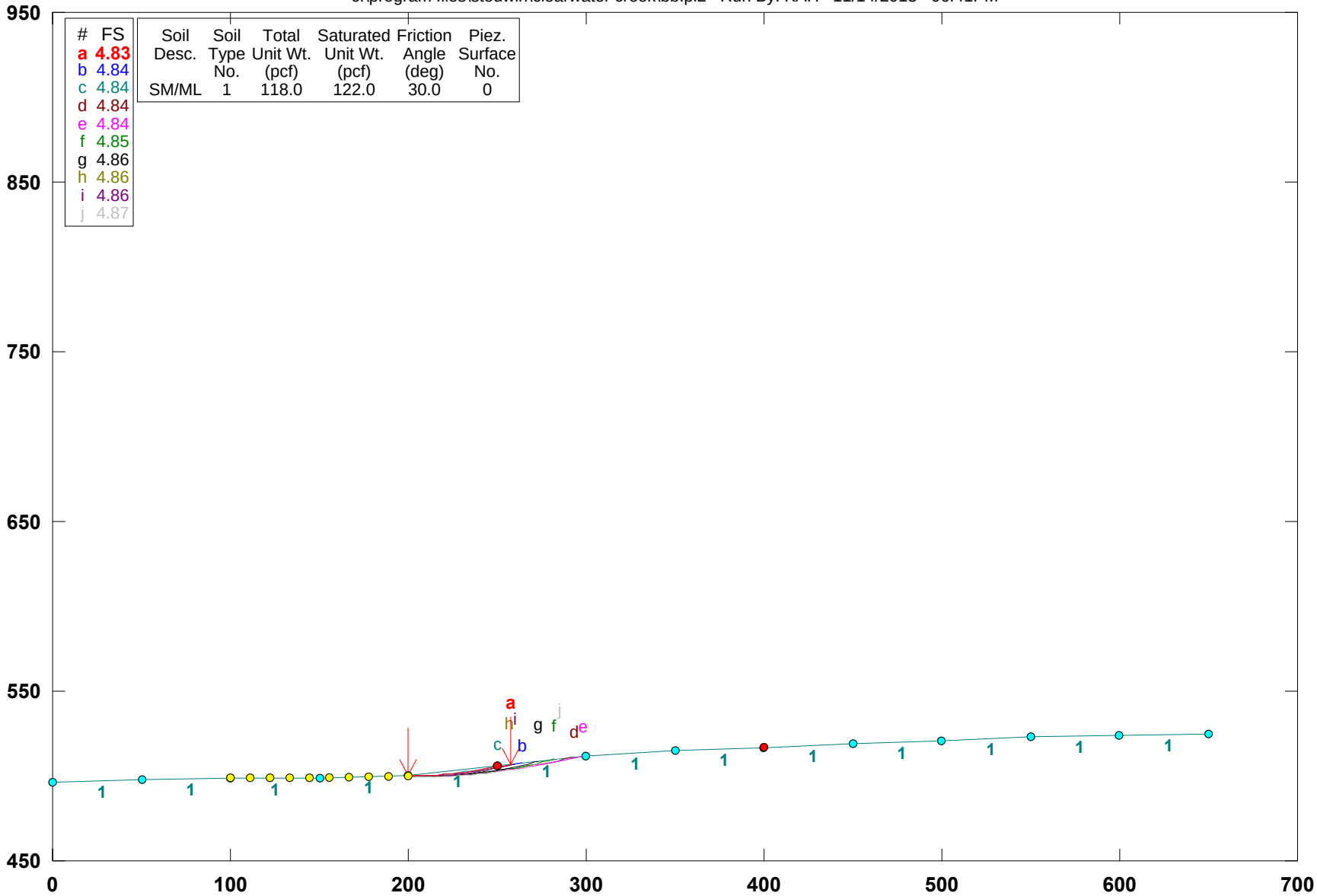
Safety Factors Are Calculated By The Modified Bishop Method

STED



Clearwater Creek - Existing Slope - Section B-B' - Static

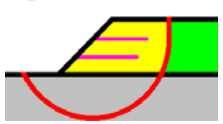
c:\program files\stedwin\clearwater creek\bb.pl2 Run By: KAH 11/14/2013 06:41PM



STABL6H FSmin=4.83

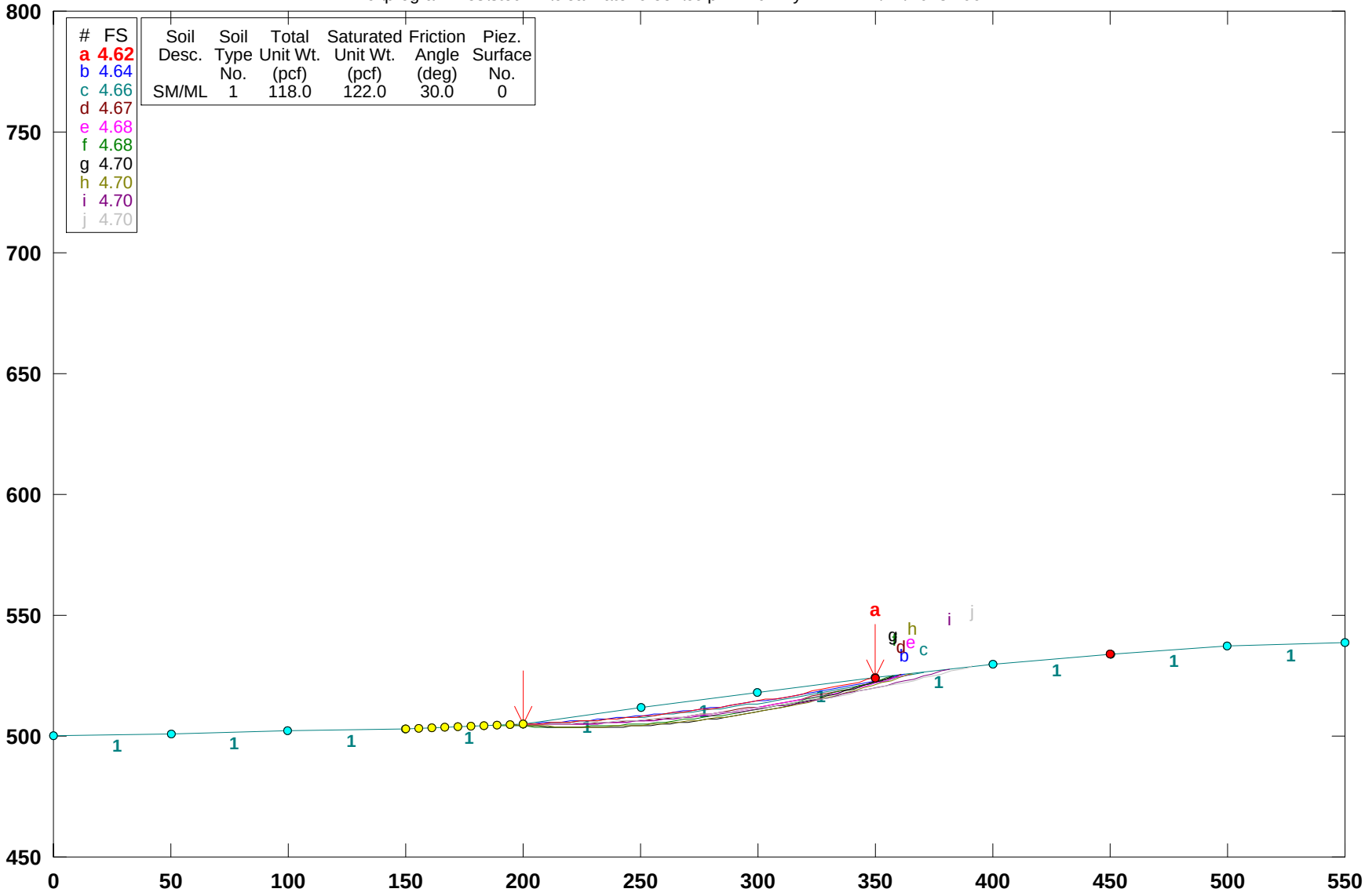
Safety Factors Are Calculated By The Modified Bishop Method

STED



Clearwater Creek - Existing Slope - Section C-C' - Static

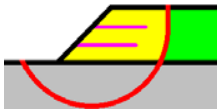
c:\program files\stedwin\clearwater creek\cc.pl2 Run By: KAH 11/14/2013 06:47PM



STABL6H FSmin=4.62

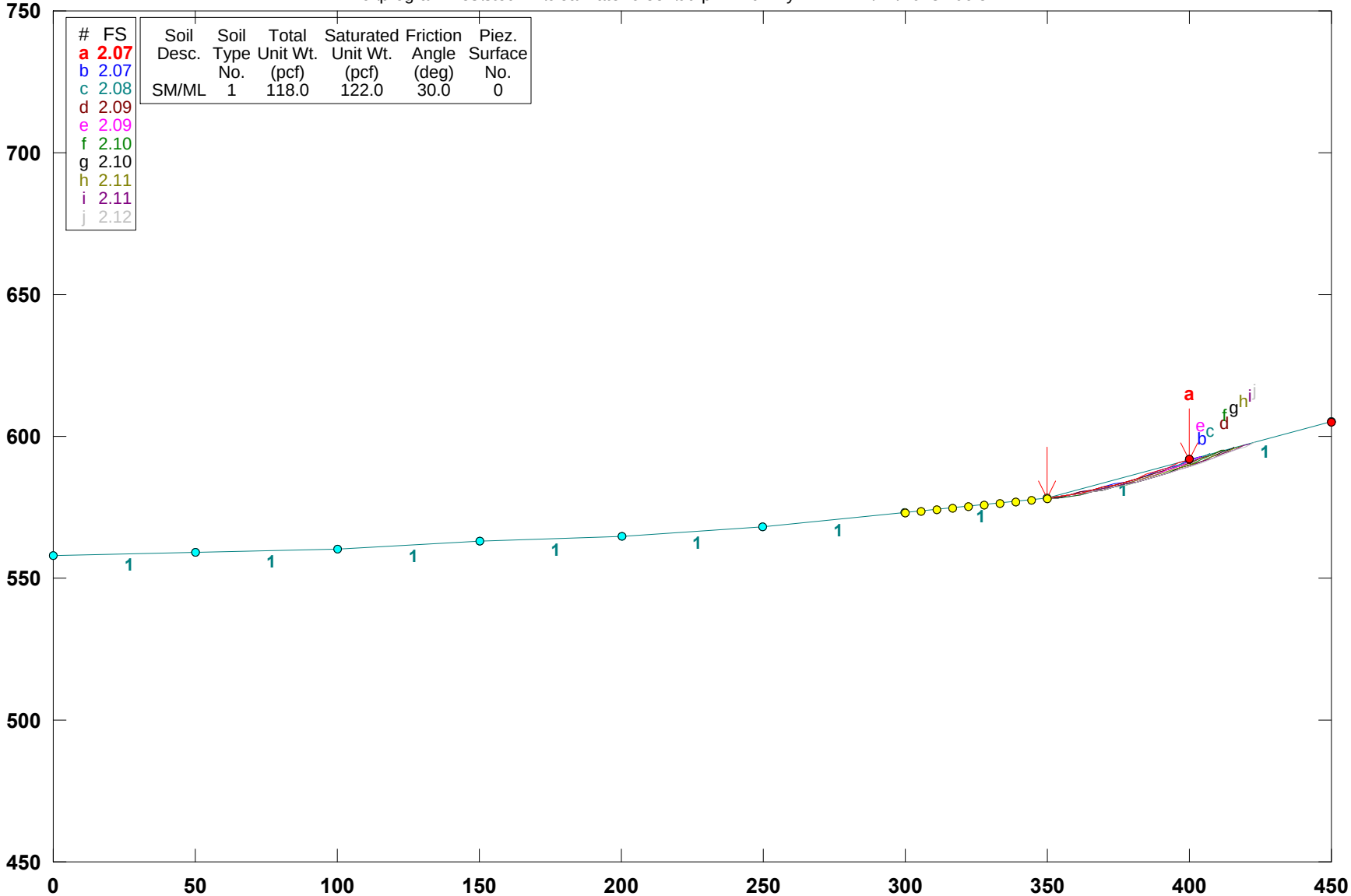
Safety Factors Are Calculated By The Modified Bishop Method

STED



Clearwater Creek - Existing Slope - Section D-D' - Static

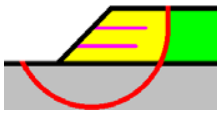
c:\program files\stedwin\clearwater creek\dd.pl2 Run By: KAH 11/14/2013 06:54PM



STABL6H FSmin=2.07

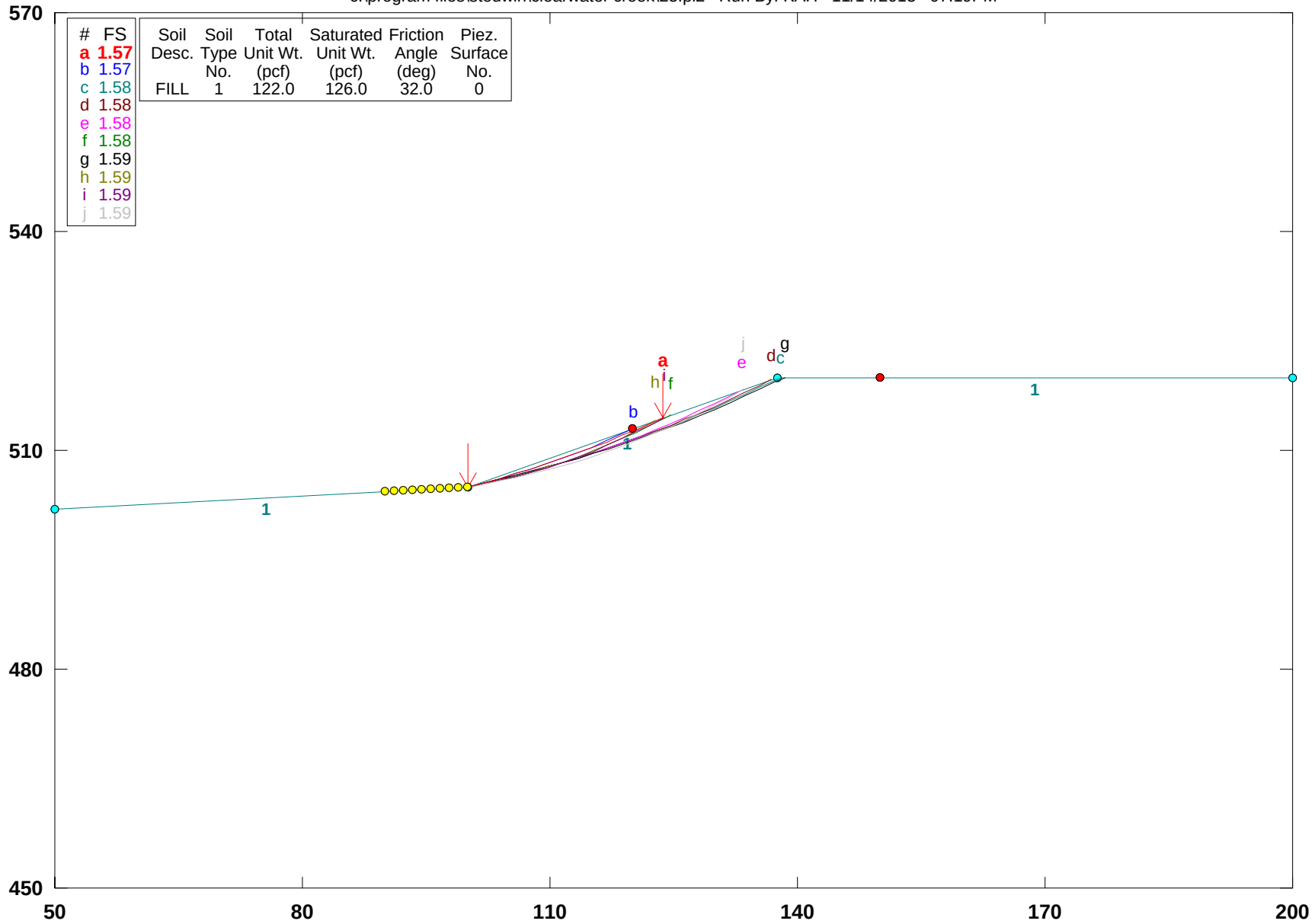
Safety Factors Are Calculated By The Modified Bishop Method

STED



Clearwater Creek - Re-Graded Slope - Proposed 2.5:1 - Static

c:\program files\stedwin\clearwater creek\25.pl2 Run By: KAH 11/14/2013 07:19PM



STABL6H FSmin=1.57

Safety Factors Are Calculated By The Modified Bishop Method

STED

Appendix VI

Washington Department of Ecology Well Logs

WATER WELL REPORT

Original & 1st copy – Ecology, 2nd copy – owner, 3rd copy – driller

Construction/Decommission *("x" in circle)*

☒ Construction 297149

○ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

CURRENT Notice of Intent No. W 256485

Unique Ecology Well ID Tag No. BAC 768

Water Right Permit No. DOMESTIC EXEMPT

Property Owner Name CALVARY CHAPEL

Well Street Address 10611 CLEARWATER

City KENNEWICK County BENTON

Location 1/4-1/4 SE 1/4 Sec 1 Twn 8N R 28 (EWM) or WWM circle one

Lat/Long (s, t, r Still **REQUIRED**) Lat Deg _____ Lat Min/Sec JKQR

Long Deg _____ Long Min/Sec _____

Tax Parcel No. 110188450 1007

PROPOSED USE: ☒ Domestic ☐ Industrial ☐ Municipal ☐ DeWater ☒ Irrigation ☐ Test Well ☐ Other _____

TYPE OF WORK: Owner's number of well (if more than one) _____

☒ New well ☐ Reconditioned *Method:* ☐ Dug ☐ Bored ☐ Driven ☐ Deepened ☐ Cable ☒ Rotary ☐ Jetted

DIMENSIONS: Diameter of well 6 inches, drilled 122 ft.

Depth of completed well 122 ft.

CONSTRUCTION DETAILS

Casing Installed: ☒ Welded 6" Diam. from 1/2 ft. to 122 ft.

☐ Liner installed _____" Diam. from _____ ft. to _____ ft.

☐ Threaded _____" Diam. from _____ ft. to _____ ft.

Perforations: ☐ Yes ☒ No

Type of perforator used _____

SIZE of perfs _____ in. by _____ in. and no. of perfs _____ from _____ ft. to _____ ft.

Screens: ☐ Yes ☒ No ☐ K-Pac Location _____

Manufacturer's Name _____

Type _____ Model No. _____

Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel/Filter packed: ☐ Yes ☒ No ☐ Size of gravel/sand _____

Materials placed from _____ ft. to _____ ft.

Surface Seal: ☒ Yes ☐ No To what depth? 22 ft.

Material used in seal BENTONITE

Did any strata contain unusable water? ☐ Yes ☒ No

Type of water? _____ Depth of strata _____

Method of sealing strata off _____

PUMP: Manufacturer's Name _____

Type: _____ H.P. _____

WATER LEVELS: Land-surface elevation above mean sea level _____ ft.

Static level 68 ft. below top of well Date 12/26/07

Artesian pressure _____ lbs. per square inch Date _____

Artesian water is controlled by _____ (cap, valve, etc.)

WELL TESTS: Drawdown is amount water level is lowered below static level

Was a pump test made? ☐ Yes ☒ No If yes, by whom? _____

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____

Bailer test _____ gal./min. with _____ ft. drawdown after _____ hrs.

Airtest 100 gal./min. with stem set at 100 ft. for 3 hrs.

Artesian flow _____ g.p.m. Date _____

Temperature of water _____ Was a chemical analysis made? ☐ Yes ☐ No

CONSTRUCTION OR DECOMMISSION PROCEDURE

Formation: Describe by color, character, size of material and structure, and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information. (USE ADDITIONAL SHEETS IF NECESSARY.)

MATERIAL	FROM	TO
TAN SILT & SAND	0	37
TAN SILT SAND & GRAVEL	37	68
BROWN SILT, SAND, GRAVEL	68	—
H2O	—	122
AIR TEST		
100 GPM @ 100		
37 GPM @ 90		
15 GPM @ 80		

DEPT OF ECOLOGY Received MAY 14 2008 CENTRAL REGION OFC

Start Date 12/26/07 Completed Date 12/26/07

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee Name (Print) JEREMY RUDC

Driller/Engineer/Trainee Signature _____

Driller or trainee License No. 2691

Drilling Company NELSON WELL DRILLING

Address 7505 W COURT ST.

City, State, Zip PASCO WA 99301

Contractor's Registration No. NELSONWD198CQ Date 12/27/07

If TRAINEE,

Driller's Licensed No. _____

Driller's Signature _____

Ecology is an Equal Opportunity Employer.

ECY 050-1-20 (Rev 3/05) **The Department of Ecology does NOT warranty the Data and/or Information on this Well Report.**

File Original and First Copy with Department of Ecology
Second Copy—Owner's Copy
Third Copy—Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

16606 Start Card No 033544

Water Right Permit No

(1) OWNER: Name Keith Hughes Address 8000 W Clearwater

(2) LOCATION OF WELL: County Benton SW ¼ NW ¼ Sec 6 T 8 N., R 29 W.M.

(2a) STREET ADDDRESS OF WELL (or nearest address) 8000 W Clearwater

(3) PROPOSED USE: ☑ Domestic ☐ Irrigation ☐ DeWater Industrial ☐ Test Well ☐ Municipal ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one)
Abandoned ☐ New well ☐ Deepened ☐ Reconditioned ☐
Method: Dug ☐ Cable ☑ Rotary ☐ Bored ☐ Driven ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well 6" inches.
Drilled 110 feet. Depth of completed well 108 ft.

(6) CONSTRUCTION DETAILS:
Casing installed: 10" Diam. from 0 ft. to 18 ft.
Welded ☑ 6" Diam. from 0 ft. to 110 ft.
Liner installed ☐
Threaded ☐ " Diam. from ft. to ft.

Perforations: Yes ☑ No ☐
Type of perforator used Mills Knife
SIZE of perforations 1/4 in. by 2 in.
120 perforations from 86 ft. to 86 ft.
perforations from ft. to ft.
perforations from ft. to ft.

Screens: Yes ☐ No ☑
Manufacturer's Name
Type Model No.
Diam. Slot size from ft. to ft.
Diam. Slot size from ft. to ft.

Gravel packed: Yes ☐ No ☑ Size of gravel
Gravel placed from ft. to ft.

Surface seal: Yes ☑ No ☐ To what depth? 18 ft.
Material used in seal Bentonite Slurry
Did any strata contain unusable water? Yes ☐ No ☑
Type of water? Depth of strata
Method of sealing strata off

(7) PUMP: Manufacturer's Name
Type: H.P.

(8) WATER LEVELS: Land-surface elevation above mean sea level ft.
Static level 77 ft. below top of well Date 9-13-90
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☐ If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test 20 gal./min. with 0 ft. drawdown after 3 hrs.
Airtest gal./min. with stem set at ft. for hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? Yes ☐ No ☑

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.

MATERIAL	FROM	TO
SILT + SAND	0	63
Brown CLAY	63	70
TAN SILTY SAND	70	72
Boulders	72	78
Cobles + Boulders	78	87
Course gravels water Bearing	87	96
PAN HARD	96	103
Tight SAND + Gravel water Bearing	103	110

RECEIVED SEP 17 1990 DEPT OF ECOLOGY WATER RIGHTS OFFICE

Work started 9/4, 19. Completed 9/13, 19 90

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME Omega Drilling Inc. (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)
Address RT. 14 BOX 3010 Kent WA 98333.
(Signed) Robert L Jones Jr (WELL DRILLER) License No. 1948
Contractor's Registration No. OMEGDC120BB Date 9/14/90, 19 90

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1-20 (10/87) -1329-

File Original and First Copy with Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

Application No. G4-25960

Permit No. G4-25960 P

(1) OWNER: Name The Quadrant Corporation Address P.O. Box 130; Bellevue, WA 98009

(2) LOCATION OF WELL: County Benton — SE ¼ SW ¼ Sec. 36 T. 9 N., R. 28E W.M.

Bearing and distance from section or subdivision corner 230' 529° 57' 32" of NE corner of SE½ SW½ S 36

(3) PROPOSED USE: Domestic ☐ Industrial ☐ Municipal XX
Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) 1
New well XX Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☐ Driven ☐
Reconditioned ☐ Rotary XX Jetted ☐

(5) DIMENSIONS: Diameter of well 14" x 12¼" inches.
Drilled 1208 ft. Depth of completed well 1208 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 22" Diam. from 0 ft. to 90 ft.
Threaded ☐ 14" Diam. from 0 ft. to 940 ft.
Welded XX " Diam. from ft. to ft.

Perforations: Yes ☐ No XX
Type of perforator used
SIZE of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

Screens: Yes ☐ No XX
Manufacturer's Name
Type Model No.
Diam. Slot size from ft. to ft.
Diam. Slot size from ft. to ft.

Gravel packed: Yes ☐ No XX Size of gravel:
Gravel placed from ft. to ft.

Surface seal: Yes XX No ☐ To what depth? 90 ft.
Material used in seal Neat Cement
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? Depth of strata
Method of sealing strata off

(7) PUMP: Manufacturer's Name None
Type: H.P.

(8) WATER LEVELS: Land-surface elevation above mean sea level ft.
Static level 88 ft. below top of well Date 1-16-79
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes XX No ☐ If yes, by whom? Layne - Western

Yield:	gal./min. with	ft. drawdown after	hrs.
600	104	2	
" 800	" 174	" 4	"
" 1000	" 277	" 6	"
1200	362	8	

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test 1-18-79
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m. Date
Temperature of water 33° F Was a chemical analysis made? Yes XX No ☐

(10) WELL LOG:

Formation: *Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.*

MATERIAL	FROM	TO
Fine sand small gravel	0	25
Medium & coarse gravel	25	38
Coarse gravel to ½"	38	68
Large rocks 4" or better	68	85
Gray & black hard basalt	85	93
Gray hard basalt	93	170
Blue silt with a yellow clay streak, soft	170	178
Blue clay	178	199
Fractured black basalt with blue clay interbeds	199	212
Gray & black basalt, some water, medium hard	212	235
Black medium hard basalt	235	250
Black medium hard basalt fractured	250	259
Gray hard basalt	259	336
Gray fractured basalt	336	345
Black silty clay some dominant blue included	345	359
Black medium hard basalt	359	368
Gray medium fractured basalt	368	379
Black basalt, clay, soft	379	383
Gray medium hard basalt	383	398
Gray hard basalt	398	432
Gray & black basalt, small amount of gray clay, soft	432	439
Black & gray hard basalt	439	480
Black hard basalt	480	558
Black hard basalt, sandstone	558	588
Black fractured medium basalt	588	619
Gray fractured very rough hard basalt	619	672
Clay, gray basalt, gray chips, silt	672	672
Black hard basalt	672	728

-Continue on following page-------

Work started 10-10, 1978 Completed 1-----18, 1979

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Layne - Western Company, Inc. (Person, firm, or corporation) (Type or print)

Address P.O. Box 336; Moses Lake, WA 98837

[Signed] [illegible] (Well Driller)

License No. 0733 Date Feb 20, 1980

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 060-1-20

File Original and First Copy with Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

Application No G4-25960

Permit No G4-25960 P

(1) OWNER: Name The Quadrant Corporation Address P.O. Box 130; Bellevue, WA 98009

(2) LOCATION OF WELL: County Benton SE ¼ SW ¼ Sec 36 T 9 N R 28E W.M.

Bearing and distance from section or subdivision corner 230' 529° 57' 32" of NE corner of SE½, SW½, S 36

(3) PROPOSED USE: Domestic ☐ Industrial ☐ Municipal ☐ Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one)

New well ☐ Method Dug ☐ Bored ☐
Deepened ☐ Cable ☐ Driven ☐
Reconditioned ☐ Rotary ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well inches.

Drilled ft Depth of completed well ft.

(6) CONSTRUCTION DETAILS:

Casing installed: " Diam from ft to ft

Threaded ☐ " Diam from ft to ft.

Welded ☐ " Diam from ft to ft

Perforations: Yes ☐ No ☐

Type of perforator used

SIZE of perforations in. by in.

perforations from ft to ft

perforations from ft to ft.

perforations from ft to ft

Screens: Yes ☐ No ☐

Manufacturer's Name

Type Model No.

Diam Slot size from ft to ft.

Diam Slot size from ft. to ft.

Gravel packed: Yes ☐ No ☐ Size of gravel

Gravel placed from ft to ft.

Surface seal: Yes ☐ No ☐ To what depth? ft.

Material used in seal

Did any strata contain unusable water? Yes ☐ No ☐

Type of water? Depth of strata

Method of sealing strata off

(7) PUMP: Manufacturer's Name

Type H.P.

(8) WATER LEVELS: Land-surface elevation above mean sea level ft

Static level ft. below top of well Date

Artesian pressure lbs per square inch Date

Artesian water is controlled by (Cap, valve, etc)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level

Was a pump test made? Yes ☐ No ☐ If yes by whom?

Yield gal/min with ft drawdown after hrs

" " " "

" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test

Bailer test gal/min with ft drawdown after hrs

Artesian flow g.p.m. Date

Temperature of water Was a chemical analysis made? Yes ☐ No ☐

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
-Continued from previous page----		
Black medium hard basalt	728	732
Gray hard basalt	732	748
Fine gravel, siltstone, hard	748	770
Clay, gray basalt, black chips	770	783
Green clay	783	807
Black basalt, medium soft basalt	807	821
Gray clay, clay mixed with mud	821	833
Black fine grained, medium hard siltstone	833	854
Gray clay streaked with soft beds of basalt	854	924
Clay, sand	924	934
Basalt, highly vesicular	934	961
Fractured, water bearing	961	986
Black & gray basalt, water bearing	986	1075
Black basalt	1075	1125
Siltstone	1125	1128
Gray basalt, water bearing	1128	1195
Green siltstone, water bearing	1195	1208

RECEIVED

Work started 10---10, 1978 Completed 1----18, 1979

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief

NAME Layne - Western Company, Inc. (Person, firm, or corporation) (Type or print)

Address P.O. Box 336; Moses Lake, Wa 98837

[Signed] (Well Driller)

License No 0733 Date FEB. 20, 1980

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 060-1-20

Appendix VII

NRCS Soil Survey

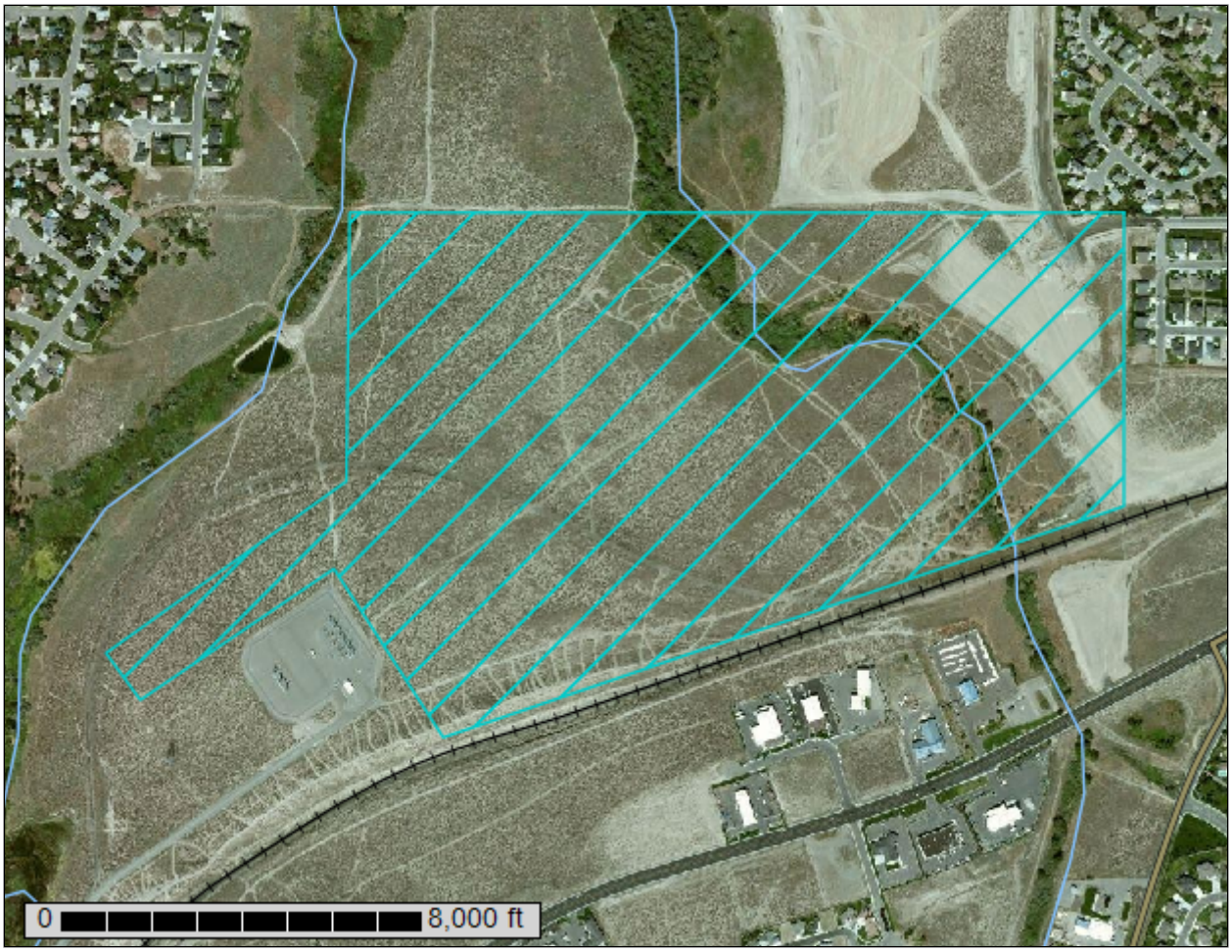
United States Department of Agriculture

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

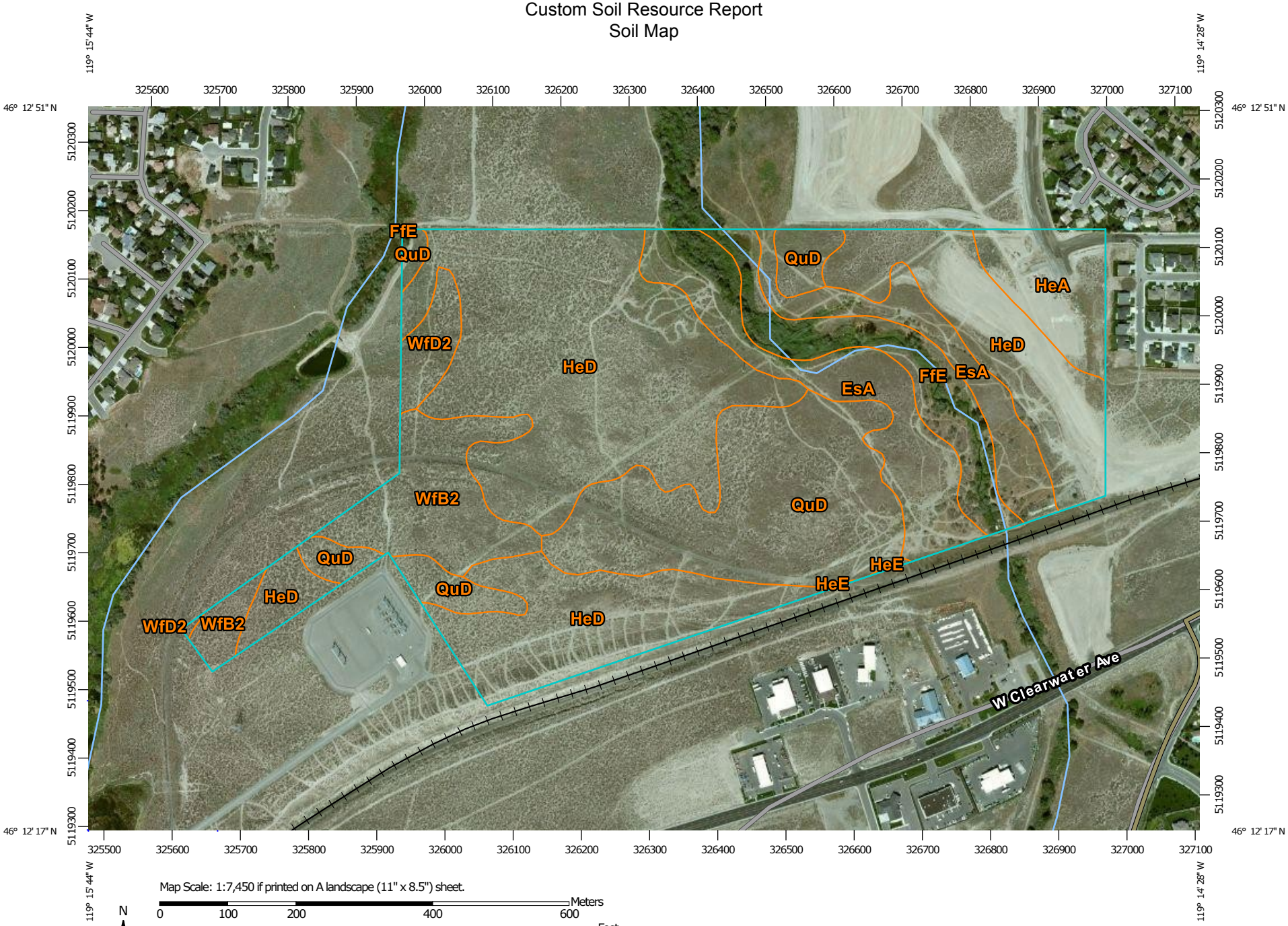
Custom Soil Resource Report for Benton County Area, Washington

Clearwater Creek



November 4, 2013

Custom Soil Resource Report
Soil Map



Map Scale: 1:7,450 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 100 200 400 600

Feet: 0 350 700 1400 2100

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

Map Unit Legend

Benton County Area, Washington (WA605)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
EsA	Esquatzel fine sandy loam, 0 to 2 percent slopes	19.9	13.4%
FfE	Finley stony fine sandy loam, 0 to 30 percent slopes	9.2	6.2%
HeA	Hezel loamy fine sand, 0 to 2 percent slopes	6.8	4.6%
HeD	Hezel loamy fine sand, 2 to 15 percent slopes	68.2	46.0%
HeE	Hezel loamy fine sand, 0 to 30 percent slopes	0.2	0.1%
QuD	Quincy loamy sand, 2 to 15 percent slopes	29.6	20.0%
WfB2	Warden very fine sandy loam, 2 to 8 percent slopes, eroded	11.6	7.8%
WfD2	Warden very fine sandy loam, 8 to 15 percent slopes, eroded	2.8	1.9%
Totals for Area of Interest		**148.4**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified

by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Benton County Area, Washington

EsA—Esquatzel fine sandy loam, 0 to 2 percent slopes

Map Unit Setting

Elevation: 300 to 2,900 feet
Mean annual precipitation: 6 to 12 inches
Mean annual air temperature: 48 to 54 degrees F
Frost-free period: 130 to 200 days

Map Unit Composition

Esquatzel and similar soils: 90 percent

Description of Esquatzel

Setting

Landform: Flood plains
Parent material: Alluvium

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water capacity: High (about 11.8 inches)

Interpretive groups

Farmland classification: Prime farmland if irrigated
Land capability classification (irrigated): 2e
Land capability (nonirrigated): 3e
Hydrologic Soil Group: B

Typical profile

0 to 11 inches: Fine sandy loam
11 to 44 inches: Silt loam
44 to 60 inches: Stratified very fine sandy loam to silt loam

FfE—Finley stony fine sandy loam, 0 to 30 percent slopes

Map Unit Setting

Elevation: 300 to 1,500 feet
Mean annual precipitation: 6 to 9 inches
Mean annual air temperature: 48 to 50 degrees F
Frost-free period: 135 to 180 days

Map Unit Composition

Finley and similar soils: 90 percent

Description of Finley

Setting

Landform: Flood plains, terraces
Parent material: Alluvium

Properties and qualities

Slope: 0 to 30 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 20 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water capacity: Low (about 4.2 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability classification (irrigated): 6e
Land capability (nonirrigated): 7s
Hydrologic Soil Group: A
Ecological site: SANDY 6-10 PZ (R007XY501WA)

Typical profile

0 to 3 inches: Stony fine sandy loam
3 to 13 inches: Fine sandy loam
13 to 28 inches: Very gravelly loam
28 to 60 inches: Extremely cobbly loamy sand

HeA—Hezel loamy fine sand, 0 to 2 percent slopes

Map Unit Setting

Elevation: 400 to 2,500 feet
Mean annual precipitation: 6 to 10 inches
Mean annual air temperature: 52 to 54 degrees F
Frost-free period: 150 to 200 days

Map Unit Composition

Hezel and similar soils: 90 percent

Description of Hezel

Setting

Landform: Terraces
Parent material: Eolian sands over silty lacustrine deposits

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 20 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water capacity: High (about 9.1 inches)

Interpretive groups

Farmland classification: Farmland of statewide importance
Land capability classification (irrigated): 3e
Land capability (nonirrigated): 6e
Hydrologic Soil Group: C

Typical profile

0 to 3 inches: Loamy fine sand
3 to 16 inches: Loamy fine sand
16 to 60 inches: Stratified fine sandy loam to silt loam

HeD—Hezel loamy fine sand, 2 to 15 percent slopes

Map Unit Setting

Elevation: 400 to 2,500 feet
Mean annual precipitation: 6 to 10 inches
Mean annual air temperature: 52 to 54 degrees F
Frost-free period: 150 to 200 days

Map Unit Composition

Hezel and similar soils: 100 percent

Description of Hezel

Setting

Landform: Terraces
Parent material: Eolian sands over silty lacustrine deposits

Properties and qualities

Slope: 2 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 20 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)

Available water capacity: High (about 9.1 inches)

Interpretive groups

Farmland classification: Farmland of statewide importance
Land capability classification (irrigated): 4e
Land capability (nonirrigated): 6e
Hydrologic Soil Group: C

Typical profile

0 to 3 inches: Loamy fine sand
3 to 16 inches: Loamy fine sand
16 to 60 inches: Stratified fine sandy loam to silt loam

HeE—Hezel loamy fine sand, 0 to 30 percent slopes

Map Unit Setting

Elevation: 400 to 2,500 feet
Mean annual precipitation: 6 to 10 inches
Mean annual air temperature: 52 to 54 degrees F
Frost-free period: 150 to 200 days

Map Unit Composition

Hezel and similar soils: 100 percent

Description of Hezel

Setting

Landform: Terraces
Parent material: Eolian sands over silty lacustrine deposits

Properties and qualities

Slope: 0 to 30 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 20 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water capacity: High (about 9.1 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability classification (irrigated): 6e
Land capability (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: SANDS 6-10 PZ (R007XY502WA)

Typical profile

0 to 3 inches: Loamy fine sand
3 to 16 inches: Loamy fine sand

16 to 60 inches: Stratified fine sandy loam to silt loam

QuD—Quincy loamy sand, 2 to 15 percent slopes

Map Unit Setting

Elevation: 200 to 4,500 feet
Mean annual precipitation: 6 to 12 inches
Mean annual air temperature: 46 to 54 degrees F
Frost-free period: 100 to 200 days

Map Unit Composition

Quincy and similar soils: 100 percent

Description of Quincy

Setting

Landform: Terraces
Parent material: Eolian sands

Properties and qualities

Slope: 2 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 3 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water capacity: Moderate (about 6.1 inches)

Interpretive groups

Farmland classification: Farmland of statewide importance
Land capability classification (irrigated): 4e
Land capability (nonirrigated): 3e
Hydrologic Soil Group: A

Typical profile

0 to 9 inches: Loamy sand
9 to 60 inches: Loamy fine sand

WfB2—Warden very fine sandy loam, 2 to 8 percent slopes, eroded

Map Unit Setting

Elevation: 600 to 1,300 feet
Mean annual precipitation: 6 to 9 inches
Mean annual air temperature: 48 to 52 degrees F

Frost-free period: 135 to 200 days

Map Unit Composition

Warden and similar soils: 100 percent

Description of Warden

Setting

Landform: Terraces
Parent material: Loess over lacustrine deposits

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water capacity: High (about 11.5 inches)

Interpretive groups

Farmland classification: Farmland of statewide importance
Land capability classification (irrigated): 3e
Land capability (nonirrigated): 6e
Hydrologic Soil Group: B

Typical profile

0 to 4 inches: Very fine sandy loam
4 to 14 inches: Silt loam
14 to 60 inches: Stratified very fine sandy loam to silt loam

WfD2—Warden very fine sandy loam, 8 to 15 percent slopes, eroded

Map Unit Setting

Elevation: 600 to 1,300 feet
Mean annual precipitation: 6 to 9 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 135 to 200 days

Map Unit Composition

Warden and similar soils: 100 percent

Description of Warden

Setting

Landform: Terraces
Parent material: Loess over lacustrine deposits

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water capacity: High (about 11.5 inches)

Interpretive groups

Farmland classification: Farmland of unique importance
Land capability classification (irrigated): 4e
Land capability (nonirrigated): 6e
Hydrologic Soil Group: B

Typical profile

0 to 4 inches: Very fine sandy loam
4 to 14 inches: Silt loam
14 to 60 inches: Stratified very fine sandy loam to silt loam

Appendix VIII

USGS Design Maps Summary

Design Maps Summary Report

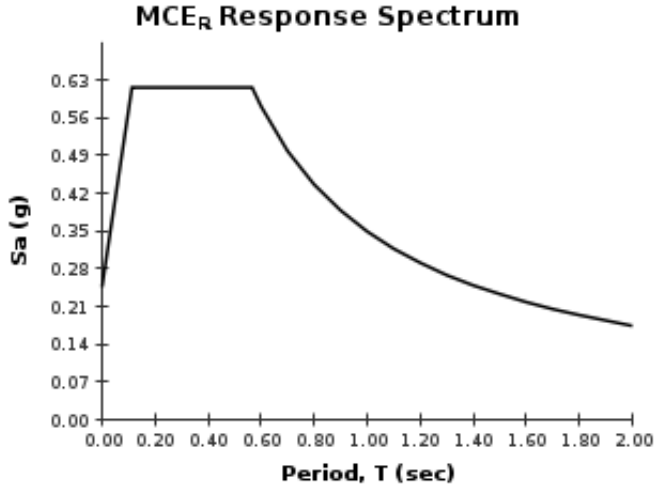
User–Specified Input

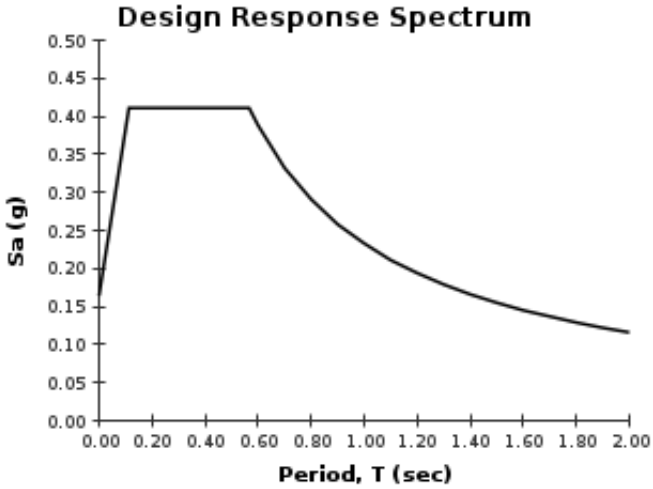
Report Title	Clearwater Creek Mon November 4, 2013 21:31:24 UTC
Building Code Reference Document	2012 International Building Code (which utilizes USGS hazard data available in 2008)
Site Coordinates	46.20995°N, 119.252°W
Site Soil Classification	Site Class D – "Stiff Soil"
Risk Category	I/II/III

USGS–Provided Output

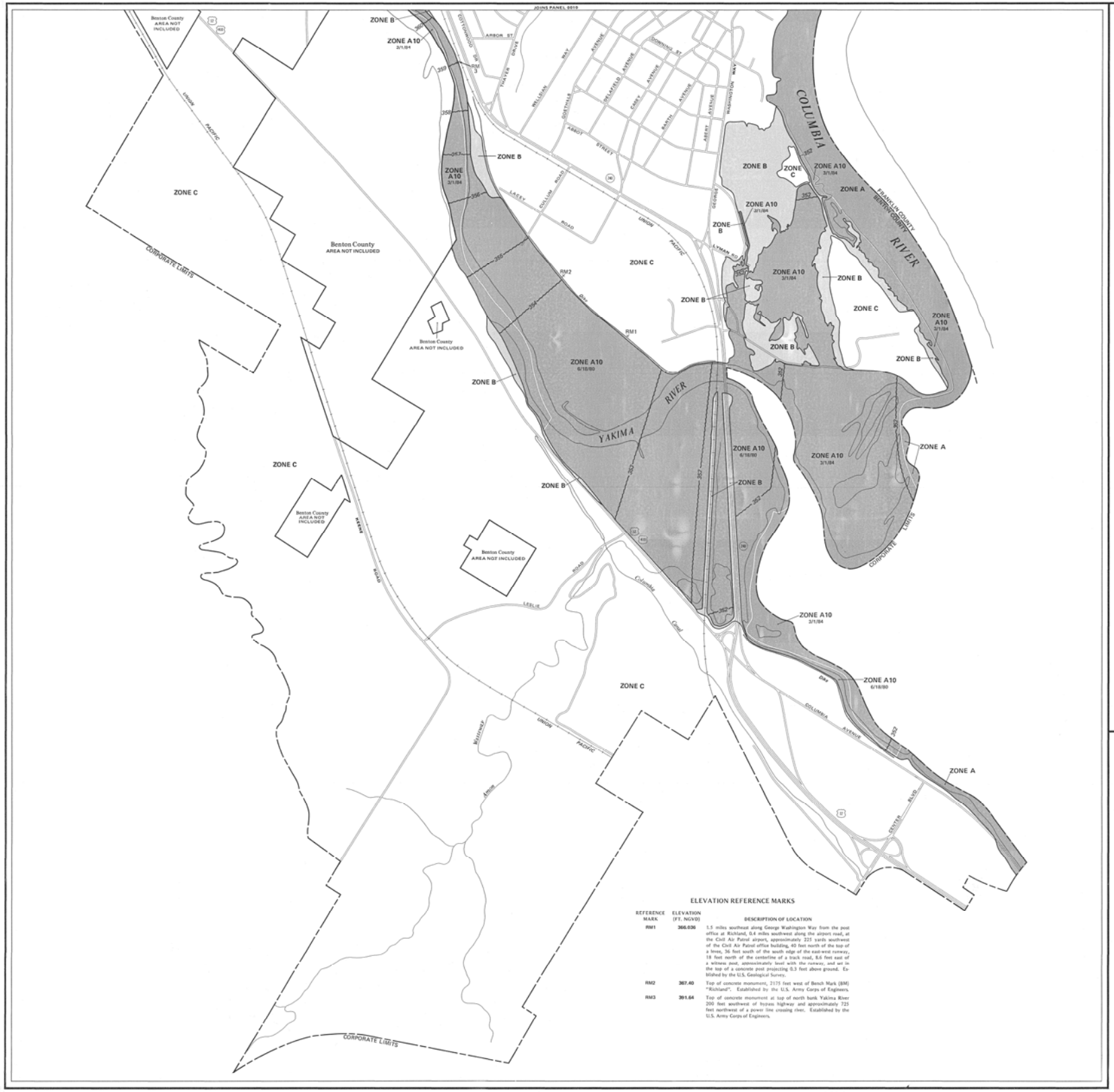
S_S =	0.421 g	S_{MS} =	0.616 g	S_{DS} =	0.411 g
S_1 =	0.162 g	S_{M1} =	0.349 g	S_{D1} =	0.233 g

For information on how the SS and S1 values above have been calculated from probabilistic (risk-targeted) and deterministic ground motions in the direction of maximum horizontal response, please return to the application and select the "2009 NEHRP" building code reference document.





Appendix IX
Miscellaneous Documents



KEY TO MAP

500-Year Flood Boundary	
100-Year Flood Boundary	ZONE B
Zone Designations* With Date of Identification e.g., 12/2/74	ZONE A1 DATE / ZONE A0 DATE
100-Year Flood Boundary	ZONE B
500-Year Flood Boundary	
Base Flood Elevation Line With Elevation In Feet**	513
Base Flood Elevation in Feet Where Uniform Within Zone**	(EL 987)
Elevation Reference Mark	RM7
Zone D Boundary	
River Mile	•M1.5

**Referenced to the National Geodetic Vertical Datum of 1929

*EXPLANATION OF ZONE DESIGNATIONS

ZONE	EXPLANATION
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
A0	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined.
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
A99	Areas of 100-year flood to be protected by flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood. (Medium shading)
C	Areas of minimal flooding. (No shading)
D	Areas of undetermined, but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.

NOTES TO USER

Certain areas not in the special flood hazard areas (zones A and V) may be protected by flood control structures.

This map is for flood insurance purposes only; it does not necessarily show all areas subject to flooding in the community or all plasimetric features outside special flood hazard areas.

For adjoining map panels, see separately printed Index To Map Panels.

INITIAL IDENTIFICATION:
MARCH 30, 1970

FLOOD HAZARD BOUNDARY MAP REVISIONS:

FLOOD INSURANCE RATE MAP EFFECTIVE:
MARCH 30, 1970

FLOOD INSURANCE RATE MAP REVISIONS:

Map revised May 28, 1971, to add special flood hazard areas.

Map revised July 2, 1971, to clarify insurance eligibility dates.

Map revised July 1, 1974, to change zone designations.

Map revised November 14, 1975, to reflect curvilinear flood boundary and to add special flood hazard areas.

Map revised June 18, 1980, to change zone designations, flood boundaries and base flood elevations.

Map revised March 1, 1984, to change flood boundaries and corporate limits, and to add special flood hazard areas.

To determine if flood insurance is available in this community, contact your insurance agent, or call the National Flood Insurance Program, at (800) 638-6620.

APPROXIMATE SCALE
1000 0 1000 FEET

ELEVATION REFERENCE MARKS

REFERENCE MARK	ELEVATION (FT. NGVD)	DESCRIPTION OF LOCATION
RM1	366.036	1.5 miles southeast along George Washington Way from the post office at Richland, 0.4 miles southwest along the airport road, at the Civil Air Patrol airport, approximately 225 yards southwest of the Civil Air Patrol office building, 40 feet north of the top of a levee, 36 feet south of the south edge of the east-west runway, 18 feet north of the centerline of a track road, 8.6 feet east of a witness post, approximately level with the runway, and set in the top of a concrete post projecting 0.3 feet above ground. Established by the U.S. Geological Survey.
RM2	367.40	Top of concrete monument, 2175 feet west of Bench Mark (BM) "Richland". Established by the U.S. Army Corps of Engineers.
RM3	391.64	Top of concrete monument at top of north bank Yakima River 200 feet southwest of bypass highway and approximately 725 feet northwest of a power line crossing river. Established by the U.S. Army Corps of Engineers.

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

CITY OF
RICHLAND,
WASHINGTON
BENTON COUNTY

PANEL 15 OF 15
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
535533 0015 E

MAP REVISED:
MARCH 1, 1984

Federal Emergency Management Agency

SEPA COMMENT LETTERS – CLEARWATER CREEK/BEER FALLS

Public Agency Letters

1. Washington State Department of Fish and Wildlife
2. Department of Ecology
3. Bonneville Power Administration
4. Kennewick Irrigation District (attachments)
5. City of Kennewick (attachments)

City Departments

6. Energy Services
7. Fire and Emergency Services

Private Organizations and Individuals

8. Tapteal Greenway (8/8)
9. Tapteal Greenway (8/19)
10. John Roberts
11. Nancy Doran
12. Christopher Doran
13. Robert Benedetti
14. Richard Badalamente
15. Katherine & John Perry
16. John Strand
17. Lauren Caslin
18. Charles A. Lo Presti
19. Dorothea Narum
20. Mike Lilga
21. Kathy Dechter
22. Bonnie Mitchell
23. Chloe Mitchell
24. Quinn Mitchell
25. Alexandra Amonette
26. Gretchen Graber (attachents)
27. Brittney V. Tejeda
28. Heidi K. Eden (attachment – photos)
29. Bobbie Bull (attachments – photos)
30. Jerry White
31. Alison Green
32. Karen Sowers
33. Ginger Wireman

State of Washington
Department of Fish and Wildlife
Pasco District Office, Habitat Program
2620 North Commercial Avenue, Pasco, WA 99301
Phone: (509) 543- 3319, E-mail, Michael.Ritter@dfw.wa.gov

MWR-05-2013

August 22, 2013

Rick Simon
Development Services Manager
City of Richland
840 Northgate Drive
Richland, WA 99352

SUBJECT: SEPA # 201304067, Hayden Homes, LLC. Beer Falls / Amon Basin Development

Dear Mr. Simon,

The Washington Department of Fish and Wildlife (WDFW) has reviewed the SEPA checklist, WDFW Priority Habitat and Species (PHS) data, as well as other relevant information for the proposed project and offers the following comments.

In general we found that the SEPA Checklist did not provide adequate information that characterizes current site and vicinity conditions. As a result, the Checklist falls short in addressing potential impacts to fish and wildlife and their habitats.

Specifically under *B. Environmental Elements* items #3, #4 and #5 are lacking readily-available baseline data that identifies species composition and ecological process within and adjacent to the proposed project. For example, under Item #3, *Water*, *"...on or in the vicinity of the site..."* the West Fork of the Amon Creek (Amon Creek Nature Preserve) is not identified as occurring immediately adjacent to the proposed project. Additionally, the Amon Creek Nature Preserve is not identified in item #12, *Recreation*, as occurring in the vicinity of the proposed development. Also, in Items #4, *Plants*, and #5, *Wildlife*, the Checklist does identify that both the West Fork and a portion of the East Fork within the proposed project are identified as WDFW PHS sites.

We recommend that both the West and East fork be fully protected from all construction and residential soil erosion and surface water discharges. All potential soil erosion discharges should

be retained on-site through appropriate application of BMP's for erosion control or catchment basins both during construction and through residential development and occupation. During construction, city-mandated setbacks should be observed and silt curtains/fences should be utilized along with best management practices in the event the on-site containment is compromised.

The *Critical Areas and Open Space Assessment* and *Beer Falls* map identify both road and pedestrian crossings of the East Fork Amon Creek within the proposed project site. We strongly recommend that the 400' wide KID easement be maintained along the entire length of the East Fork through the project site and that city's Critical Areas Ordinance riparian buffer requirements for fish bearing waters be applied to west fork to ensure that the function and values of riparian habitat are protected to sustain fish and wildlife within this watershed.

WDFW's position is that Amon Wasteway/Creek, including the East Fork are "waters of the state", and that Hydraulic Project Approval will be required for work that affects the bed or flow, including any proposed water crossing structures. We have historically required Hydraulic Project Approvals for work in the Amon Wasteway/Creek. We do agree that this is an "altered natural watercourse" and that its hydrology has been altered by operational spill originating from irrigation return water. However, this does not change its definition as a "water of the state" as there is also a natural hydrology element to this watershed. The definition of "waters of the state" makes no reference to hydrology; just that there is a defined bed and bank of the watercourse. (RCW 77.55.011). We maintain that this watercourse can be mutually managed for the public interests of fish and wildlife protection as well as serving to convey operational spill from irrigation systems and that these functions are not mutually exclusive.

We appreciate the opportunity to provide these comments. Please contact me at 509-543-3319 or at Michael.Ritter@dfw.wa.gov if you have any questions.

Sincerely,

Michael Ritter

Michael Ritter
Area Habitat Biologist
cc:

Michael Livingston, Region 3 Director, WDFW
Perry Harvester, Region 3, Habitat Program Manager, WDFW

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
15 W Yakima Ave, Ste 200 • Yakima, WA 98902-3452 • (509) 575-2490

August 22, 2013

Rick Simon
City of Richland
P.O. Box 190
Richland, WA 99352

Re: S2013-100/Z2013-105/Z2013-106

Dear Mr. Simon:

Thank you for the opportunity to comment on the pre-threshold determination for a comprehensive plan amendment, zoning changes, and subdivision of 96.51 acres into 460 residential lots known as Clearwater Creek/Beer Falls. This project is proposed by Hayden Homes, LLC. We have reviewed the environmental checklist and have the following comment.

SHORELANDS/ENVIRONMENTAL ASSISTANCE

The SEPA checklist information (the **June 2013 PLA Engineering Project Narrative for Beer Falls**) does not include some important information about the proposed location of this subdivision: its proximity and impact on the preservation area for which WSDOT got wetland mitigation credits. Information needs to be provided regarding impacts of this project on the west portion of Amon Creek and the preserved natural area adjacent to the proposed high intensity development. Since setting aside a large portion of this adjacent natural area was intended as mitigation, it is important to assure that this area will continue to function optimally. If new roadways or bridges will need to be installed in this area, mitigation for the impacts to the original natural area and wetland mitigation package will need to occur.

Introduction of pets, light and noise pollution, lawn chemical application, stormwater runoff, introduction of invasive plant species, unauthorized intrusion via unofficial paths or lawn debris dumping, are just a few of the impacts that are associated with residential development.

Residential development of more than one house per acre is considered a high intensity use with respect to the effects on wetlands. (Wetland Mitigation in

Washington State Part 1, Chapter 6, Land Use Table 2). One house per acre is considered a moderate impact when adjacent to wetlands and their buffers. Because this is such a special area with access and (in some cases views of Amon Creek and the designated natural area on the west side, or Amon Wasteway on the east side), the developer should consider whether creation of larger lots in the residential subdivision area could still bring in the same anticipated revenue on a per acre basis. It is Ecology's experience that individuals are willing to pay more for larger lots in proximity to wetlands and protected open space areas, especially in dry desert areas. Reduction of density is especially important in the areas of proposed phases 17, 18, and 19 and the east portions of phase 2 and phase 11 east of Bellarive Road.

The Biology Soil and Water habitat assessment report should include an evaluation of current and potential wildlife species use of the Amon Creek west wetland corridor, the preserve natural area and associated uses of the Amon Wasteway east corridor in order to identify what impacts this project will have and to identify what mitigation measures could be taken to mitigate these impacts. Impacts to all waters of the state need to be identified and information on how those impacts will be mitigated needs to be included in environmental documents.

The Comprehensive Plan Amendment application narrative should be accompanied by a color coded map which shows existing zoning areas and another map which shows the specific areas where changes will occur with the proposed zoning. The map that was provided shows easement locations but does not clearly identify the changes. As currently presented, changes are not clear and submitted maps are hard to read.

The trail system needs to be shown on the site plans and information should be provided as to how it will be constructed and of what materials (e.g. pavement width, shoulder width, etc.). The trail should be constructed primarily outside of wetland and riparian buffers with minimal impact to wildlife corridors. If impervious surfacing will be used, stormwater flows off the trail should be sheet flow if possible or otherwise directed so that erosion will not occur and such that water quality of site water bodies will not be impaired.

A copy of the conceptual grading plan should be made available for SEPA review. Ecology recommends that grading should be phased or timed to have the minimum amount of exposure for each construction period in accordance with an Ecology construction stormwater permit and BMPs within a SWPPP (Stormwater Pollution Prevention Plan).

Ecology recommends that existing riparian vegetation and biologic wetlands on this site that are associated with the east fork of Amon "wasteway" be protected in a permanent

tract that is wide enough to meet best available science and encapsulate said vegetation. (It appears from the drawings that this may already be present on the proposed site map, but this is not entirely clear in the submitted preliminary plat drawing.) It would be helpful for SEPA review if the development boundaries and tracts were superimposed on an aerial photo. Protection of Amon Wasteway and the water that moves through it with functional/vegetated buffers will be an advantage to the developer and to the residents and to the wildlife that already are living there. This could be a "win-win-win" for all users if the riparian vegetation and wetlands that have formed here are protected in this way.

As regional groundwater rises from the increase in surrounding irrigation use to water lawns, etc. both the Amon Creek West and East Fork ravine will carry additional water that comes from groundwater sources. From a wetland evaluation and protection perspective, the path system, trail, road and utility crossings and any grading or filling within all watered areas needs to be described.

The **west fork of Amon Creek** has natural spring areas from groundwater sources and the **main-stem of Amon Creek** (down drainage from the confluence of the east and west forks) contains a Category I wetland that received the highest overall functional value score of more than 90 wetlands evaluated in eastern Washington when the eastern Washington wetland rating system was being tested in the field. Protection of all of the Amon Wasteway and Creek system waters from introduction of pollutants is important in order to keep the functional and aesthetic values in place and to protect this valuable asset for the current and future residents of the City.

The Biology Soil and Water habitat assessment document only deals with salmonid fisheries issues. Because there is a functioning wetland mitigation area adjacent to the property (The mitigation area included preservation of upland vegetation as part of the mitigation ratio balance.), the habitat assessment should also address the existing habitat values of the natural area (as they relate to continuing functions of the wetland mitigation area) and whether those functions will be diminished by the proposed development. (See paragraph 3 above.)

The first paragraph of the Biology Soil and Water, Inc Report contains an inaccurate statement regarding the stance of the State of Washington as to the jurisdictional status of the east fork of Amon Wasteway. Ecology SEA program has commented on many SEPA documents in the vicinity of Amon Wasteway (aka east Fork of Amon Creek) that for **wetlands and water quality protection**, we would consider activities adjacent and within the waterway to *possibly* require **401 water quality certification** review and/or the issuance of an administration order under **State Water Quality law (RCW 90.48 and WAC 173-201A.** These statutes protect beneficial uses of all state water (including

wetland functions) and allow use of those statutes to mitigate for impacts to potential wetland areas. The BSW explanatory paragraphs only reference one letter that KID wrote to Ecology and one 2001 BPA report, not an Ecology or other State response to the letter or the report. If the east fork channel are slated to be moved or "re-formed" in the future, permits from Ecology *may* be required under water quality law in order to allow the activity to proceed and to mitigate any identified wetland losses. Jurisdictional issues aside, **it is in everyone's best interest to allow these return flow waters to remain on the surface and in the existing or proposed channel open space tract area to provide aesthetic, potential wetland and habitat values.**

Ecology wetland staff would be happy to meet with the City and the applicant to discuss these issues and how we can work together to protect the Amon Creek watershed.

If you have any questions or would like to respond to these Shorelands/Environmental Assistance comments, please contact **Catherine Reed** at (509) 575-2616.

Sincerely,

Gwen Clear
Environmental Review Coordinator
Central Regional Office
(509) 575-2012

2088

Department of Energy

Bonneville Power Administration
PO Box 4580
West Richland, WA 99353-4049

August 19, 2013

In reply refer to: Beer Falls, Hayden Homes LLC
Located within a Portion of Section 1, Township 8 North,
Range 28 East, W.M., Benton County, Washington

City of Richland
Rick Simon, Development Services
840 Northgate Drive
Richland, WA 99352

Dear Rick:

The Bonneville Power Administration (BPA) has reviewed the above-mentioned proposed plat and its relationship to the BPA 70-foot wide transmission line right-of-way that this plat impacts. BPA does have some concerns with the activities that may occur within the proposed housing subdivision. The owner will need to submit a new land use application, the associated $250 application fee and acquire a Land Use Agreement from BPA. Applicant must send in grading/excavation plan and complete page three (3) of application, clearly identifying distances proposed road crossings are from BPA structures, as well as any proposed community mail boxes, vaults, underground utilities, cable, water and sewer crossings. Electronic copies of are preferred and can be sent via email directly to slbillings@bpa.gov or to dxrodgers@bpa.gov.

Activities that block maintenance crews (such as the installation of fences) or safety concerns (such as buildings, public roads, driveways, utilities, small structures) need to be addressed prior to construction in order to avoid later modification, at the developers expense.

BPA requests that the following language be included on the plat map:

> **The Bonneville Power Administration (BPA) imposes certain conditions on the portions of those properties encumbered by its high voltage transmission line right-of-way. BPA does not allow structures to be built within the right-of-way, nor does it allow access to be blocked to any transmission facilities. Any activity that is to occur within the right-of-way needs to be permitted by BPA prior to installation or construction. Information regarding the permitting process for proposed uses of the right-of-way may be addressed to BPA Real Estate Field Services at (406) 751-7821.**

If you have any questions regarding this request or need additional information, please feel free to contact me. I can be reached at (509) 318-3324 or by email atslbillings@bpa.gov.

Sincerely,

Sandra L. Billings

Sandra L. Billings
Field Realty Specialist

Enclosures

August 22, 2013

KENNEWICK IRRIGATION DISTRICT

Rick Simon
City of Richland
Planning & Development Services
840 Northgate Drive
Richland, WA 99352

Subject: Review Comments on the Beer Falls SEPA checklist

Dear Mr. Simon:

This letter provides Kennewick Irrigation District (KID) review comments on SEPA Review for Preliminary Plat of Beer Falls (S2013-100) submitted by Hayden Homes, LLC, 2464 SW Glacier Place, Suite 110, Redmond, OR 97756. The property is located east of Leslie Rd. and north of W. Clearwater Ave. in the Southeast Quarter of Section 01, Township 8 North, Range 28 East, W.M. and includes the following parcels:

- 101881000001000
- 101882000001002

The property identified on this proposed preliminary plat is located within the KID boundaries, but is classified as non-irrigable land. KID's comments on the Beer Falls SEPA checklist are as follows:

- #A-10- Permits from USBR/KID are required for the road and trail crossings in the Amon Wasteway right of way.

- #B-3.a.1)- Water is delivered downstream of the project to KID's Gage Pumps which serve approximately 1,600 KID water users, in addition to "overflow" as stated by the applicant in the checklist.

- #B-5-a.- The Amon Wasteway corridor includes the presence of raptors, songbirds, game birds and migratory waterfowl. Prior studies also indicate presence of a variety of fish species including bass, pumpkinseed, Coho salmon at various life stages at various time of the year. See attached aquatic habitat study and stream flow report.

- #B-7.b.10-KID's operation and maintenance of the Amon Wasteway will occasionally create noise audible in the proposed neighborhood.

12 W. Kennewick Ave., Kennewick, WA99336, (509) 586-9111, fax (509) 586-7663, www.kid.org

- #B-11.a-Stray outdoor light from the homes in the project into the Amon Wasteway will further diminish the wildlife habitat values.

- Stormwater from this project will not be allowed to enter the Amon Wasteway.

KID requests that the name of the project be changed to eliminate the word creek to avoid creating the false impression to future residents that the Amon Wasteway is a creek rather than an irrigational channel.

If you have any questions regarding these comments, please contact me at the address/phone number listed below.

Sincerely,

Jason McShane, P.E.
Engineering/Operations Manager

CC: LB\Correspondence\File: [1-8-28]
Applicant
R:\Development\DRY PLATS\Beer Falls\Pre-Plat

Simon, Rick

From: Gregory McCormick <Gregory.McCormick@ci.kennewick.wa.us>
Sent: Wednesday, August 21, 2013 8:51 AM
To: Simon, Rick
Cc: John Deskins
Subject: FW: Beer Falls Plat

Rick:

Thanks for the notice of application and SEPA checklist for the proposed Beer Flat development. The City has reviewed the information provided and submit the comments below for your consideration. Please let me know if you have any questions.

Regards,
Greg.

Gregory J. McCormick - **AICP**
Planning Director - Community Planning
City of Kennewick, WA
Phone: (509) 585-4463
greg.mccormick@ci.kennewick.wa.us

From: John Deskins
Sent: Wednesday, August 21, 2013 7:38 AM
To: Gregory McCormick
Subject: RE: Beer Falls Plat

Greg,

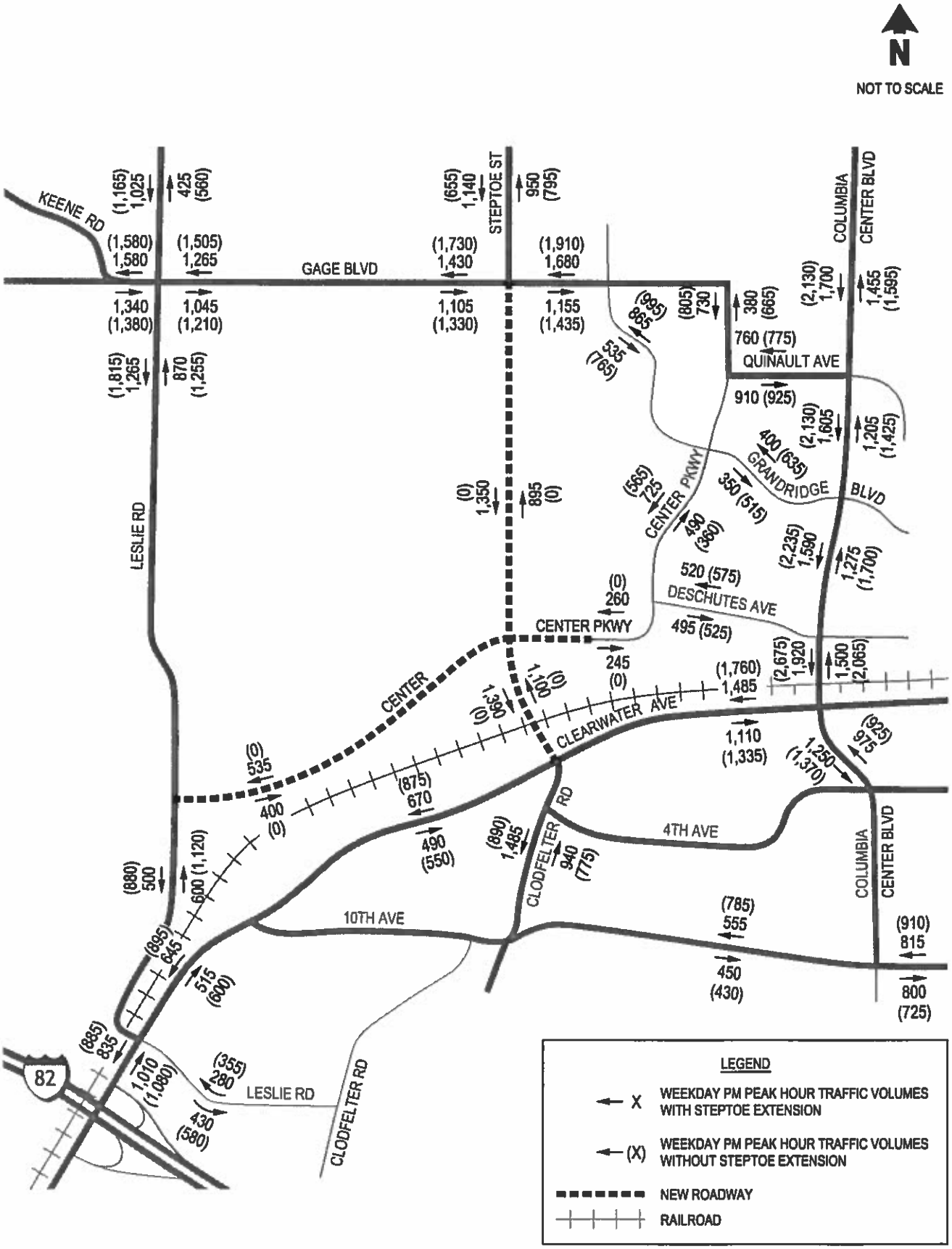
I left a message for Rick Simon, but with the short turnaround and my limited availability I would like to submit these comments for consideration. I understand that they want a direct access onto Steptoe somewhere other than Center Parkway.

If an access is granted there shall be no left-in or left-out and the developer shall be responsible for placing median barriers as necessary to prevent such movements.. Because there should be more than adequate access at the soon to be signalized Center Parkway and Steptoe intersection, therefore there really should be no consideration for right-in and right-out either unless a right-turn deceleration lane is provided. If located north of Center Parkway, adequate separation must be maintained from a right-turn out and the start of the southbound right-turn lane at Center Parkway intersection. Due to grades, I'm not certain how any direct access would be provided south of Center Parkway, but if that is the proposal, a right-turn deceleration would also need to be provided. Steptoe is a principle arterial with an initial posting of 40 mph and a design such that it could potentially be increased to 45 mph in the future. Providing access to a large development should be limited to the signal for safety and to limit sideswipe and rear-end crashes.

Also with a development this large, there is presumably a traffic impact study being performed. There is some limited potential that cross traffic into Kennewick that would access Columbia Center Boulevard at Deschutes may cause level of service and queuing issues on that approach. The intersection of Center Parkway and Steptoe and Deschutes and CCB is just under one mile in separation. It is also important to see the proposal and the timing. The northbound left-turn lane is currently striped for one turn-lane to the Richland side of Center Parkway, but could be striped for two if the development shows it is necessary.

Sincerely,

John Deskins, *PE, PTOE*
Traffic Engineer
City of Kennewick, Washington
john.deskins@ci.kennewick.wa.us
(509) 585-4400
(509) 585-4451 Fax



Richland KENNEWICK

2028 Traffic Forecasts

Steptoe Street Extension Community Project

The Transpo Group

Simon, Rick

From: John Deskins <John.Deskins@ci.kennewick.wa.us>
Sent: Friday, August 23, 2013 2:35 PM
To: Simon, Rick
Cc: Gregory McCormick; Ken Nelson; Steve Plummer
Subject: RE: Beer Falls Plat
Attachments: 2028 traffic forecasts.pdf; Steptoe & Center Parkway Intersection Forecast.pdf

Rick,

Per our discussion on the phone this morning, I did receive the plat this morning in our interoffice mail and would like to submit some further comments for your consideration. I have also attached some forecasts from the original Steptoe study performed in 2006. It is not known whether the substantial development potential planned for on the Beer Falls plat was fully captured in these traffic forecasts.

1. It should be noted that the signal at Center Parkway is currently in design. The curb-to-curb width on the west side of the intersection is set at 66 feet and was originally intended to be sufficient for a 5-lane arterial connection. At the intersection it would represent an eastbound right-turn lane, thru lane, and left-turn lane while it would have two receiving lanes, which would be necessary for the full build out of the intersection which was planned as having a dual left-turn lane for the northbound Steptoe to westbound Center Parkway movement.
    a. The City of Richland engineers should evaluate the development to determine what portions of the approach should be required in order to connect the development to the traffic signal.
    b. The City of Richland engineers should evaluate how far the 2nd westbound lane should continue in order to get reasonable lane utilization from the two left-turn lanes on Steptoe. Ideally it would be all the way to Meadows Drive or possibly about 300 feet further before tapering back to one lane.
2. The roadway section proposed for Center Parkway appears to be a standard residential cross section. Center Parkway between Leslie and Steptoe would be a key bicycling link between Richland and Kennewick as well so should be considered for a section that would have bike lanes. For that matter Bellerive is also shown on the FHWA map as a collector stree.
3. Full access to Center Parkway on the west side should be limited to 300 feet or more from the intersection of Steptoe Street to maintain future viability of the access and ideally would be located directly across from Meadows Drive.
4. Access to Lot 3 on the east side of Steptoe is extremely challenging. It should be limited to the existing driveway at the far east side of the property on Center Parkway.
5. The previous comments still apply.

Thank you.

Sincerely,

John Deskins, *PE, PTOE*
Traffic Engineer
City of Kennewick, Washington
john.deskins@ci.kennewick.wa.us
(509) 585-4400
(509) 585-4451 Fax

Simon, Rick

From: Hill, Kelly
Sent: Monday, August 19, 2013 2:11 PM
To: Simon, Rick
Cc: Stauffer, Kris; Talmage, William
Subject: Beer Falls

Rich,

Below are Energy Services comments on the review:

1. In the project narrative under Utilities and Services it states that Benton PUD will be providing power, when the City of Richland will be providing the power for this development.
2. On the plat drawings it does not show the 10' Utility Easement that is adjacent to either side of the road ROW.
3. On Sheet 2, lower detail, it shows the ROW going from 60' to 70', this will cause a disconnect in the Utility Easement along the southern side, this will need to be addressed.

Let me know if you need any other information.

Thanks

Kelly D. Hill, PE
Electrical Distribution Engineer
City of Richland
Business:(509) 942-7416
Cell: (509) 420-6469
email: khill@ci.richland.wa.us

Simon, Rick

From: Jeff Simon <jsimon@richland.lib.wa.us>
Sent: Wednesday, August 21, 2013 5:50 PM
To: Simon, Rick
Subject: FW: Proposed Preliminary Plat of Beer Falls

From: Jordon, Jim [mailto:JJordon@CI.RICHLAND.WA.US]
Sent: Mon 8/19/2013 4:00 PM
To: Simon, Jeffrey
Subject: Proposed Preliminary Plat of Beer Falls

Rick;
Richland Fire and Emergency Services will need to assure the Secondary Emergency Vehicle Access is in place for any phase of combustible construction and Subdivision and Streets meet the requirements of the Richland Municipal code.

Tapteal Greenway
PO Box 3007 Richland, WA. 99354 509-627-6621 www.tapteal.org

August 8, 2013

Rick Simon, Development Services Manager
City of Richland
P.O. Box 190
975 George Washington Way
Richland, WA 99352

Dear Rick:

The City of Richland has received a preliminary plat application for "Beer Falls", a development proposed by Hayden Homes adjacent to the Amon Creek Natural Preserve. The development area includes lands designated as a Geologic Hazard Area on the City's sensitive area maps. As a result, certain applicant and City actions are required by the City's Critical Areas Ordinance. Some of the relevant sections from the ordinance follow:

> 22.10.290 Administrative evaluation of geologic reports and studies.
> The city of Richland shall review the geologic reports and studies to determine the significant risks posed by the activity to life and property on and off the project site.
>
> B. Application Requirements. The information required by this section should be coordinated with reporting requirements required by this section for any other sensitive area located on the site.
> 1. Prior to the issuance of a SEPA threshold determination for a proposal, a wetland determination, wetland delineation report, wildlife habitat report or geologic hazard report must be submitted to the city of Richland for review upon request of the planning and development services manager if such sensitive areas are indicated on any portion of the site.
>
> 3. Applicants for activities within 200 feet of geologic hazard areas shall conduct technical studies and reports which include the following:
> a. Review site history and available information;
> b. Conduct a surface reconnaissance of the site and adjacent areas;
> c. Conduct subsurface exploration suitable to the site and proposal to assess geotechnical geohydrologic conditions;
> d. Recommend surface water management controls during construction and operation;
> e. Propose construction scheduling;
> f. Recommendations for site monitoring and inspection during construction;
> g. Conduct a detailed stability analysis of the existing landslide that demonstrates that the proposal will result in a suitable factor of safety during and following site development;
> h. Evaluate the presence of geologic conditions giving rise to geologic hazards;
> i. Evaluate the safety and appropriateness of the proposed activities;

Tapteal Greenway
PO Box 3007 Richland, WA. 99354 509-627-6621 www.tapteal.org

August 8, 2013

Rick Simon, Development Services Manager
City of Richland
P.O. Box 190
975 George Washington Way
Richland, WA 99352

Dear Rick:

The City of Richland has received a preliminary plat application for "Beer Falls", a development proposed by Hayden Homes adjacent to the Amon Creek Natural Preserve. The development area includes lands designated as a Geologic Hazard Area on the City's sensitive area maps. As a result, certain applicant and City actions are required by the City's Critical Areas Ordinance. Some of the relevant sections from the ordinance follow:

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> d. Recommend surface water management controls during construction and operation;
> e. Propose construction scheduling;
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> g. Conduct a detailed stability analysis of the existing landslide that demonstrates that the proposal will result in a suitable factor of safety during and following site development;
> h. Evaluate the presence of geologic conditions giving rise to geologic hazards;
> i. Evaluate the safety and appropriateness of the proposed activities;

RECEIVED
AUG 19 2013
Planning & Development Services

Tapteal Greenway

August 19, 2013

Rick Simon, Development Services Manager
City of Richland
P.O. Box 190
975 George Washington Way
Richland, WA 99352

Dear Rick:

This document is Tapteal Greenways comment on the SEPA Environmental Checklist provided by Hayden Homes for the Beer Falls project.

It is our opinion that the developer has not accurately evaluated the environmental impact, judging by his responses. The impacts and the developer's inability to evaluate the impacts are reasons there should be a determination of significance.

We hope you will give this document your full attention.

Scott Woodward
President—Tapteal Greenway
627-3621, PO Box 3007 Richland, WA. 99352

Esquatzel Fine Sandy Loam (EsA) 14.4% of the site Finley Stony Fine Sandy Loam (FfE) 7% Bezel Loamy Fine Sand (HeA & HeD) 48.8% of the site Quincy Loamy Sand (QuDJ21.9% of the site Warden Very Fine Loamy Sand (WJB2) 7.9% of the site

Soil types in Amon Basin are published on the City of Richland's website at (https://www.ci.richland.wa.us/index.aspx?nid=393) and by the USDA Natural Resources Conservation Service (NRCS) (http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx). A map from the NRCS website of Amon Basin is shown in Figure 1. In the Hayden homes development area, over half of the area is comprised of Hezel loamy fine sand with 2-15% slopes. Other soil types include Quincy loamy sand and Warden very fine sand loam (WVFSL, 3 classes, all 'eroded'), both common soil series in the PNW. Some key points relevant to the development area include:

- The 'K factor' indicates susceptibility to sheet and rill erosion by water and can range from 0.02-0.69. The higher the number, the more susceptibility. The Warden VFSL's have the highest K factor of 0.49, and that is all on the west side of the property, east of Amon Creek. Hezel LFS comprises most of the north central part of the property as has a high K factor of 0.32.

- The area with Warden Soils also has a rating of "very limited" for local roads and streets, due primarily to slope and frost action. A total of 28% of the area has this rating.

- Quincy loamy sand, primarily in the southeast part of the property and comprising ~23% of the area, has a 'very limited' rating for shallow excavations. Here is the explanation: *"Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.*

Richland's map of geological sensitive areas can be found in the document center on its website at http://www.ci.richland.wa.us/DocumentCenter/View/894. A portion of that map showing Amon Basin is shown in Figure 3. The City has designated portions of the Hayden Homes development area as geologically sensitive. This sensitivity is also indicated in the soils survey discussed above which indicated the possibility of erosion and soil types with limited suitability for roads and surface excavations. The location of the development directly adjacent to and up gradient of Amon Creek and its associated wetlands amplifies this sensitivity.

Geological sensitive areas require applicant actions according to Richland's Critical Areas Ordinance. Relevant sections from the ordinance follow:

22.10.290 Administrative evaluation of geologic reports and studies.

Therefore, applicant should be required to prepare a geologic hazard report prior to preparing SEPA documentation. The ordinance dictates that studies in 22.10.290 B.3.a-m are required. Special attention should be paid to determining impacts to Amon Creek, Amon Creek wetlands, and fish and wildlife resources during and after construction. An assessment of the impacts of surface water runoff and the inevitable rise of ground water levels as irrigation occurs should be made before SEPA documentation is prepared.

Therefore, analysis of the soil composition suggests the probability of erosion issues, difficulty in maintaining roads, and unfavorable conditions for shallow excavations. The proposed development does not appear to be sensitive to existing topography or to have minimal environmental impact, particularly to the Amon Creek Preserve and Claybell Park.

Are there surface indications or history of unstable soils in the immediate vicinity? If so, please describe.

None known.

See notes above

D. Describe the purpose, type, and approximate quantities of any filling or proposed grading. Also, indicate the source of fill.

Preliminary quantities are approximately 300,000 cubic yards of cut and 300,000 cubic yards of fill. These quantities may change as phasing progresses. The source of fill will be through the on-site *excavation areas.*

Goals and policies in the Comprehensive Plan promote the preservation of open space and encourage the best use of existing natural features, open spaces, and structural facilities to enhance recreational opportunities. Implementation of these goals and policies, as well as development and implementation of a regional open space plan will help ensure that designated open space in the Richland UGA is retained.

Urban development goal 3.

Development through appropriate siting and orientation of buildings, should recognize and preserve established major vistas, as well as protect natural features such as rivers, ridgelines, steep slopes, and major drainage corridors and archeological and historical resources.

Policy 1 - Development should be sensitive to existing topography and landscaping.

1. Is there any surface water body on or in the vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, and wetlands)? If yes, describe the type and provide names and into which stream or river it flows into.

There is an irrigation channel named Amon Wasteway that meanders through the site within a 400' easement. Overflow irrigation water from Kennewick Irrigation is directed to the channel in the spring and summer. There is no hydrology within the channel during the fall or winter. The irrigation channel is not classified as a stream or river.

There is no mention of Amon Creek which is in the vicinity of the site. In some cases less than 200 feet from the site. Amon Creek will be the subject of all the downhill drainage from the west center point of the development to the western border of the site.

2) Will the project require any work within 200 feet of the described waters? If yes, please describe and attach available plans.

Yes, there will be a roadway crossing and grading within the 400' easement. Additionally, afew small trail crossings may be constructed in association with a planned neighborhood path system.

The northeast corner of the plat is less than 200 feet from Amon Creek and the Preserve.

2) Describe waste material that will be discharged into the ground from septic tanks or other sources; (e.g., domestic sewage; industrial, containing the following chemicals...; agricultural; etc.). Describe the size and number of the systems, houses to be served; or, the number of animals or humans the systems are expected to serve.

Domestic sewage will be discharged to a public sewer system.

Where and how will the development connect to the city system?

B. Water runoff (including stormwater):

1. Describe the source of runoff (including storm water) and method of collection and disposal. Include

cabbage, other

- Water plants: water lily, eelgrass, milfoil, other
- Other types of vegetation

Next to the irrigation channel there are thickets of willow and Russian olive and afew cottonwoods.

No mention here of the shrub steppe ecosystem considerd a priorty habitat by Washington State Dept. of Fish and Wildlife and a habitat of greatest concern in the Columbia Plateau by WDFW. Documentation from the Nature Conservancy identifies 25 upland shrub plants on the site including:

- *Western yarrow*
- *Gray rabbit brush*
- *Green rabbit brush*
- *Cheat grass*
- *Tansy mustard*
- *Tumble mustard*
- *fiddle neck*
- *Sand doc*
- *Prairie rocket*
- *Hoary aster*
- *Astrangelous-sclocaprus (loco weed)*
- *Festuca-micro*
- *Tridenta-Wyoming sage*
- *Long leaf phlox*
- *Sandburg's bluegrass*
- *Bastard toad flax*
- *Monroe's globe mallow*
- *Turpentine cymopterous*
- *Thelypodium*
- *Hop sage*
- *Carey's balsome root*
- *Storks bill*
- *Bulbous bluegrass*
- *Squirrel tail*
- *Desert parsley*

2. What kind and amount of vegetation will be removed or altered?

All vegetation will be removed within the site area to be developed to accommodate grading activities including utility extensions and construction of stonnwater management facilities. Some of the area within the Amon Wasteway easement and areas along existing power lines will remain undisturbed.

environment by utilizing a variety of landscape materials indigenous to this arid region. The word <u>includes</u> does not comply with Policy 4 of the Comp plan.

5. Animals

B. Circle any birds and animals which have been observed on or near the site:

1. Birds: hawk, heron, eagle, songbirds, other;
2. Mammals: deer, bear, elk, beaver, other; and,
3. Fish: bass, salmon, trout, herring, shellfish, other.

There are small mammals, such as mice and rabbits located on and near the site as well as other mammals indigenous to the City of Richland area.

There is no mention of the Lower Columbia Basin Audubon Society's documentation of 150 species of birds that frequent Amon Basin.

The applicant did not circle any of the choices indicating a lack of knowledge of the area or that there is none of the above.

For the record from the choices given there are:

Birds: 150 species, including hawks, herons, eagles, songbirds,

Mammals: deer, beaver, other; river otters, coyote, American badger,(State species of concern candidate) Black-tailed jackrabbit (State species of concern candidate), mink, weasel

Fish: bass, salmon, trout

C. List any threatened or endangered species known to be on or near the site.

None known.

Steelhead (ESA Threatened Species and Rainbow Trout - spawning and rearing

Vacant land with no use.

Forgot to mention that Claybell park, Claybell Natural Area and Amon Creek Natural Preserve border the site on the north, Amon Creek Natural Preserve borders the site on the west and southwest.

The current use is bird watching, educational field trips, walking, trail running, mountain biking

2. Has the site been used for agriculture? If so, please describe.

The applicant has no knowledge of agricultural use of the property.

Apples and wheat have been grown in the agricultural zoned areas by the current owner.

E. What views in the immediate vicinity would be altered or obstructed?

F.

None.

The open space views of rolling hills, Priority Habitat shrub steppe, spring time blooms of native plants, black-tailed jack rabbits, side blotched lizards and the nighttime darkness will all be gone. That is a considerable alteration to the views for the immediate community.

G. Proposed measures to reduce or control aesthetic impacts:

None, no aesthetic impacts are anticipated.

See above

H. Light and glare

1. What type of light or glare will the proposal produce? What time of day would it mainly occur?

D. Proposed measures to reduce or control impacts on recreation, including recreational opportunities to be provided by the project or applicant:

Sidewalks and paths will be installed to create directional pedestrian control and improved recreational exercise opportunities, offering an all- weather, universally accessible surface to enter and exit the site and to connect with the area's sidewalk system.

The preliminary plat only provides one pedestrian access point to Claybell Park, Claybell Natural Area and Amon Creek Natural Preserve. That is one access pedestrian point for 460 homes and nearly 1000+ people.

b. Please describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.

None known.

To quote Dr. Steve Reidel, WSU Tri Cites:
"...the present course of the Yakima River from Benton City to the delta at Bateman Island is not the original Yakima River. When the Yakima River began to flow west from the Cascades, it turned south at Benton City and followed a course that we now know as Badger Canyon. The Amon basin is part of this original course of the Yakima River.

The ancestral Yakima River had to cut its course right through it (Olympic-Wallowa Lineament). That tells you of the power of the Yakima River when it flowed through the Amon basin.

The main geologic features that you now see in the basin are part of the reason the river no longer flows there. It took the mighty Missoula floods of the Ice Age to re-route the river. Badger Canyon is filled with gravel deposited by one or more of the Missoula floods. These gravel deposits spelled the end to that channel and the birth of the present Yakima River channel.

The surface deposits that you now see in Amon basin are mainly silts and sands. My colleague Karl Fecht has found that the youngest Missoula flood sediment, which is about 10,000 years old, covers most of the basin. But along west Amon Creek he has located 200,000-year old flood sediment and a still older one that may be over 770,000-years old.

These sediment layers tell us of the remarkable history of the Ice Age in our area and a time when great earthquakes shook the land. It is all there for you to see."

2346 Enterprise Drive
Richland, WA 99354
August 24, 2013

Mr. Rick Simon
Development Services Manager
City of Richland
840 Northgate Drive
Box 190
Richland WA 99352

Dear Rick:

Looking through Hayden Homes' responses to the SEPA Checklist that they submitted for the Beer Falls development, it is immediately evident that they have little familiarity with, nor empathy for, the goals of the Amon Creek Natural Preserve nor the City of Richland's Comprehensive Plan.

- Not only do they not allow a sufficient buffer zone adjacent to the Preserve, but they plan to perform grading and leveling within a portion of the existing Amon Creek corridor.

- Any plans for a road crossing of the Preserve should be sensitive to the existing wetlands and beaver ponds, and also should include structural design to facilitate the existing wildlife corridor and recreational and scenic uses.

- HH's cut-and-fill plans appear to have no sensitivity to the existing topography or viewscape.

- The Amon Creek Basin prehistorically was the bed of the Yakima River, and is the natural low point of a large surrounding area, including the Beer Falls development area, and receives its drainage. Since 30 – 40% of the development will be impervious surfaces, much of the drainage from those surfaces, as well as the planned lawns, is bound to end up in Amon Creek, affecting the water quality of the Natural Preserve, as well as Claybell Park, the Meadow Springs Country Club golf course, and all other areas downstream.

From its answers to the checklist, it appears Hayden Homes is oblivious to the negative impacts of its development on the neighboring Amon Creek Natural Preserve. I **urge** you to apply a **determination of significance** to the SEPA Environmental checklist for Hayden Homes.

Sincerely,

John Roberts

1516 Johnston Ave
Richland Washington, 99354
August 24, 2013

Rick Simon, Development Services Manager
City of Richland
P.O. Box 190
975 George Washington Way
Richland, WA 99352

Dear Mr. Simon,

I am writing in regard to the SEPA document submitted by Hayden Homes as part of its application for approval of the Beer Falls plat.

In reading the SEPA documentation provided by Hayden Homes, I am shocked by their superficial, incomplete, and inaccurate responses regarding the impact their project will have on the local environment.

For example:

- In response to questions about "**any** surface waterway on or **in the vicinity of**" the project, they fail to mention the west fork of the Amon creek, an area set aside as a natural reserve park. Consequently, subsequent questions about environmental impacts on neighboring waterways also fail to address impacts on the preserve.

- Their question on water runoff addresses only stormwater, thereby ignoring potential effects of residential fertilizer runoff on the nearby preserve

- Their required list of local vegetation omits mention of sagebrush and other plants characteristic of the prevailing shrub-steppe ecosystem.

- Despite specific instructions to circle the names of birds, mammals and fish species that have been identified in the area, their only response is that there are "mice and rabbits" although a 2006 article in the Tri-City Herald stated that "...100 species of birds have been identified in the Amon Basin. Beavers build ponds in Amon Creek. Coyotes have been seen in the sage between the two branches of the creek. Whitetail and mule deer sometimes cross the corridor, moving down from the Horse Heaven ridges."

- SEPA requests information about such important items as erosion control but all Hayden Homes says is that they will control it, without providing any further explanation or details.

- When asked about current usage of the site **and adjacent properties**, the only answer provided was "*Vacant land with no use.*" Such an obviously self-serving response not only ignores the amount of passive recreation that goes on in the area but also fails to mention the adjoining Amon Preserve or Claybell Park.

According to state documents, SEPA "...provides the framework for agencies to consider the environmental consequences of a proposal before taking action." Such agencies are, however, only able to properly assess impacts if they have current and accurate information. Hayden Homes certainly has the right to develop land they purchased but they should not be able to proceed with developing this plat without providing honest and thoughtful answers. The

information they provided showed a complete lack of respect for the process and for the City and citizens of Richland.

At the very least, Hayden Homes should be required to start over and provide a comprehensive and honest evaluation of the environmental impacts of their proposal.

Sincerely,

Nancy Doran

Simon, Rick

From: cndorans <cndorans@charter.net>
Sent: Tuesday, August 20, 2013 8:38 PM
To: Simon, Rick
Subject: Beer Falls development

I am writing to you to express my concern over the proposal by Hayden Homes for the Beer Falls project, and to urge you to find that there should be a determination of significance regarding the SEPA Environmental Checklist.

When I was working with one of the federal contractors in Richland some years ago, I was trying to recruit for our research group an individual who at the time was living in California. I was not optimistic of our chances but I was pleasantly surprised when he mentioned that one of the attractions of this area was the Richland parks. He did, in fact, join us and is still living in Richland. The individual's comment drove home for me how important features such as parks, recreation facilities, natural open spaces, hiking opportunities, etc. are for attracting families to our region, an impression that has been supported by numerous studies throughout the U.S. Availability of housing is, of course, important, but availability does not equate to desirability when one wants to "sell" Richland as a good place to live.

I have read Hayden Homes' responses to the questions put to them on the SEPA Environmental Checklist and I was appalled by the insensitivity of those responses to the history, current uses, and attractions of the Amon basin area in which they propose to construct 460 houses. They display an astonishing ignorance of the features of this region, and the manner in which they have answered various questions borders on arrogance and a total disregard of what impacts their project would have. I will mention just two examples, although there are many others. In response to a request to identify birds and animals which have been observed on or near the site, their response is "There are small mammals such as mice and rabbits located on and near the site as well as other mammals indigenous to the City of Richland area." That response is hard to argue with but does little to provide assurance that Hayden Homes has the slightest interest or awareness of the wildlife in the region. In response to the question "what is the current use of the site and adjacent properties?" Hayden Homes's response is "Vacant land with no use." Really? I suspect those who visit the Amon Basin area for hiking, bird watching, wildlife viewing, and education would strenuously disagree.

Hayden Homes is asking for changes in the zoning of their property to allow their development to take place. Those zoning rules were put into place as part of a vision for how Richland should be developed – with care for the environment, with an awareness of what makes this an attractive place to live, and to reflect a balance of private and public uses. The Beer Falls project proposed by Hayden Homes fails on all of these counts, and I ask you to oppose the current application. Thank you.

Sincerely,

Christopher Doran

To: Rick Simon

Comments on Beer Fall Development SEPA Errors

Environmental Check List Errors and Deficiencies.

History. Two years ago the city upgraded the sewer system running under Broadmoor between the Amon Waste Way and Amon Creek. Over 50 pumps were needed to dewater the ground so that construction could continue. To drop the water table below 20 feet those pumps ran constantly 24 hours a day for months discharging 3500 gals a minute into the Amon Waste Way. This should be on the city records. That level of flow was measured in fall and winter months. Now with the expansion of Claybell and the watering of the expanded soccer fields, and the Beer falls development, the level of ground water should rise significantly from yard irrigation and irrigation of the expanded Claybell soccer fields and street run off.

On occasion, I have water in my crawlspace and have had to install a sump pump. Every home on Broadmoor between the Amon Waste Way and Amon Creek could be impacted by a rising water table; especially those homes that are along Meadows Springs Country Club 16 hole. In fact Meadow Springs Country Club has had to invest a lot of money to raise the level of the green on the 16 hole because of the shallow depth of the ground water under that green.

The area planned for the Beer Falls development is the old Yakima River bed. Now instead of our annual 5 inches of rainfall a year "Meadow Springs" ground water will increase significantly due to the direction of a protion of the Beer Falls plume flowing downhill, and due North into an already saturated neighborhood.

. In the Hayden homes development area, over half of the area is comprised of Hezel loamy fine sand with 2-15% slopes. The 'K factor' indicates susceptibility to sheet and rill erosion by water and can range from 0.02-0.69. The higher the number, the more susceptibility. Hezel LFS comprises most of the north central part of the property as has a high K factor of 0.32. The north central portion of the Beer Falls development is directly lined up with my neighborhood . The Hayden Homes SEPA checklist does not account for the potential rill erosion runoff and saturation of our homes.

Richland has designated part of the Hayden Homes development area as geologically sensitive. Geological sensitive areas require applicants to perform certain actions per Richland's Critical Areas Ordinance.

22.10.290 Administrative evaluation of geologic reports and studies

The city of Richland shall review the geologic reports and studies to determine the significant risks posed by the activity to life and property on and off the project site. Part of this

evaluation includes; evaluating the presence of geologic conditions giving rise to geologic hazards, a characterization of soils, geology and drainage and a characterization of ground water conditions including the presence of any public or private wells in the immediate vicinity. The checklist answers submitted by Hayden Homes do not indicate any geologic hazard report. Considering the City of Richland's own data I believe that the Beer Falls Development will have impacts on ground water and may adversely impact adjoin housing areas.

Robert L. Benedetti

400 Broadmoor

Richland, Wa. 99352

509 5514400

Robert L Benedetti

Simon, Rick

From: Richard Badalamente <rbad2@charter.net>
Sent: Thursday, August 22, 2013 4:17 PM
To: Simon, Rick
Subject: HAYDEN HOMES SEPA ENVIRONMENTAL CHECKLIST

Dear Mr. Simon,

I am writing to ask that a determination of significance under SEPA be applied to the 'Beer Falls' project being proposed by Hayden Homes for Benton County Parcels numbered: 101881000001000 and 101882000001002. These parcels are adjacent to the Amon Basin Preserve. In answering the SEPA-required Environmental Checklist questions, it is clear the developer either knew little about Amon Basin and the surrounding area, or chose to ignore it.

For example, under Section B-1a, asking for a general description of the site, the developer writes, "The site is hilly." They say nothing about the preserve and don't mention the fragile riparian and shrub-steppe ecology of the area and with it the wildlife that make it their home, some unique to the area.

The most egregious omission on the developer's application is under Section B-2, 3 & 4, where the developer in proposing a "commercial and residential development to contain a total of 20 phases," including a "460 detached single family subdivision," lists only those environmental impacts immediate to the construction phase and omits to document the impacts of the developed site, such as increased vehicular traffic, air pollution, noise pollution, and water pollution. Furthermore, the developer states under A-11, that the extent and timing of commercial development is "unknown at this time." How are we to assess potential environmental impacts when the developer doesn't have a development plan?

I've spent many pleasant hours walking the excellent trail system built and maintained by volunteers from the Tapteal Greenway Association. I'm an amateur photographer and am constantly rewarded with new discoveries, from spectacular wild flowers, to the wildlife that frequent the area, including Black-Tailed Jack Rabbits.

We are fortunate to have this treasure in the very heart of our community, easily reached by our citizens, a perfect venue for educating our children (and adults) about the local ecosystem, and a draw for visitors to the region. Before we undertake such a major development project here, we must make a determination of significance under SEPA and thoroughly vet the developer's proposal and its true impacts.

Sincerely yours,

Richard Badalamente
3302 W. 42nd Pl
Kennewick, WA 99337
rbad2@charter.net
Main: 509-586-6142
Mobile: 509-546-1420

August 21, 2013

Mr. Rick Simon
Development Services Manager
City of Richland
P.O. Box 190
975 George Washington Way
Richland, WA 99352

Dear Mr. Simon:

As residents of the Richland community who have enjoyed the natural features of the Amon Basin for over a decade, and as relatively new homeowners in the Heights at Meadow Springs development, we are writing to raise questions and express concern regarding the proposed Beer Falls development, and to request that a finding of a determination of significance be applied to the SEPA Environmental Checklist for this project.

We have reviewed the Checklist submitted by Hayden Homes, and while many issues addressed by this document are beyond the scope of our expertise, there are several responses which we feel to be inaccurate, incomplete, or unacceptable. These include:

> **B. 1. e. Describe the purpose, type, and approximate quantities of any filling or proposed grading . . .** *"Preliminary quantities are approximately 300,000 cubic yards of cut and 300,000 cubic yards of fill. . ."* Policy 1 under Urban Development Goal 3 in the City of Richland's Comprehensive Plan states that "Development should be sensitive to existing topography and landscaping." The Amon Basin is characterized by beautifully undulating, hilly terrain. Will this topography be preserved by the current proposal?
>
> **B. 4. a. Check or circle types of vegetation found on the site. . .** *"Next to the irrigation channel there are thickets of willow and Russian olive and a few cottonwood."* Though we may be unable to identify the various plants by name, we can tell you there are numerous shrubs and grasses growing in the Amon Basin, in addition to willow, Russian olive, and cottonwood trees.
>
> **B. 5. a. Circle any birds and animals which have been observed on or near the site. . .** *"There are small mammals such as mice and rabbits located on and near the site as well as other mammals indigenous to the City of Richland area."* We have enjoyed viewing hawks, quail, pheasants, kestrels, kingfishers, red-winged blackbirds, as well as other birds whose names are unknown to us, in the Amon Basin. We have seen numerous black-tailed jackrabbits, a raccoon, and hope one day to see a beaver and a badger.
>
> **B. 8. a. What is the Current use of the site and adjacent properties?** *"Vacant land with no use."* The Amon Basin is a beautiful piece of land that has been enjoyed by local citizens for walking, running, mountain biking, and communing with nature.

B. 10. b. What views in the immediate vicinity would be altered or obstructed? *" None."* The views of those making use of Claybell Park, Claybell Natural Area, and the Amon Creek Natural Preserve, as well as many homeowners in the Willowbrook Heights and Heights at Meadow Springs developments, will be markedly altered.

B. 10. c. Proposed measures to reduce or control aesthetic impacts: *"None, no aesthetic impacts are anticipated."* Please see comments regarding B. 10. b., above.

B. 12. b. Would the project displace any existing recreational uses? *"No"* The project will displace walkers, runners, mountain bikers, etc.

B. 14. a. Identify the public streets and highways serving the site, and describe proposed access to the existing street system. *"Bellerive Road and Meadows Drive enter the site from the north and Center Parkway enters the site from the east. These streets connect to the existing street systems and are public right-of-way."* Bellerive Drive is a curvy, hilly road on which many motorists do not obey the speed limit. A rollover accident occurred at the intersection of Bellerive Drive and Meadows Drive South approximately one year ago, and it is our understanding that there have been other accidents at this location in the past. In addition, Bellerive Drive now runs adjacent to playfields in Claybell Park. As retired soccer parents, and a former lacrosse player (Katherine), we can tell you with certainty that there will be balls rolling into Bellerive Drive, with players to follow, creating a significant safety concern. The use of Bellerive Drive as a conduit from the Beer Falls development to the existing street system, particularly given the magnitude of the anticipated increase in traffic, is untenable.

We recognize that the property in the Amon Basin is privately owned and respect the owner's right to develop the property. However, we believe that the submitted SEPA Environmental Checklist does not demonstrate a clear understanding of the existing qualities of the Amon Basin and its value to the community. We therefore request that a finding of a determination of significance be applied to the SEPA Environmental Checklist for the proposed Beer Falls development.

Thank you for your consideration.

Respectfully,

Katherine Perry, MD

John Perry, MD

Simon, Rick

From: JStrand <jandlstrand@charter.net>
Sent: Sunday, August 25, 2013 4:20 PM
To: Simon, Rick
Subject: Hayden Homes Beer falls Project SEPA Checklist
Attachments: Beer Falls Project.doc

Hello Mr. Simon,

I am requesting that a determination of significance be applied to the SEPA Checklist submitted by Hayden Homes in support of their Beer Falls project. It is clear to me that the SEPA Checklist, particulay on matters of the ecology of the site, is misleading and insufficient to properly evaluate the impacts of the propsed action.

It is evident that Hayden Homes is not familiar with the numerous ecological studies conducted in the Amon Basin by the Nature Conservancy, the Lower Columbia Basin Audubon Society, and the Washington Department of Fish and Wildlife.

Attached please find comments on some of the more serious omissions that I fouind in the SEPA Checklist.

Thanks you for the opportunity to comment on the proposed development project.

Yours very truly,

John A. Strand, Ph.D.
Ecologist

Attachment 1: John Strand Comments (August 25, 2013) on Hayden Homes Beer Falls Project SEPA Checklist

Some of the more serious omissions that I found in the SEPA Checklist are as follows.

D. Plants (on page 8 of 19)

1. When asked to check or circle the vegetation found on site, Hayden Homes provided the following:

"Next to the irrigation channel there are thickets of willow and Russian olive and a few cottonwoods."

This is not an adequate description or even checklist of the plant species found on the site. The Nature Conservancy documented twenty-five species present in their recent survey, which included the Wyoming sage brush and gray and green species of rabbit bush, which are ecologically important species in the desert-steppe ecosystem of eastern Washington. Hayden Homes also doesn't acknowledge that the Washington Department of Fish and Wildlife lists the desert-steppe ecosystem as a "priority Habitat" and a "habitat of greatest concern on the Columbia Plateau" as it continues to lose area to development and other human activities.

5. Animals (on page 11 of 19)

B. When asked to circle any birds and animals which have been observed on or near the site, Hayden Homes provided the following:

"There are small mammals, such as mice and rabbits located on or near the site as well as other mammals indigenous to the City of Richland area."

Again Hayden Homes does not provide a check list of the birds and animals that use the desert-steppe habitat of the site, or the riparian habitat along nearby Amon Wasteway. For example, there is no mention of the Lower Columbia Basin Audubon Society's list of 150 bird species that have been observed in the Amon Basin.

Hayden Homes also minimizes the mammalian fauna of this area. Hayden Homes failed to mention that deer, beaver, river otters, American badger, skunk, mink, weasel, jack rabbit, native cottontail, and coyote all frequent the site or the nearby riparian habitat of Amon Wasteway.

Hayden Homes does not even mention the valued fish fauna of the Amon Wasteway and again tends to minimize the importance of this water body. In recent surveys of the lower waterway, Washington Department of Fish and Wildlife has documented use by both rainbow trout (presumably anadromous steelhead) and coho salmon. Another highly valued species found was the smallmouth bass.

C. List any threatened or endangered species known to be in or near the site (on page 11 of 19).

Hayden Homes responded by saying "None known."

Hayden Homes has not done their homework. They should have determined that of birds, the ferruginous hawk has been observed in the Amon Basin and is a State Threatened Species. The burrowing owl, also an indigenous species, is listed as Federal Species of Concern and a State Candidate. Of animal species, the steelhead trout that enters the lower Amon Wasteway is listed as a Federal Threatened species and a State Candidate.

D. Is the site a migration route? If so, please explain (on page 12 of 19).

Again the response is "None known," yet clearly nearby Amon Wasteway is an important movement corridor for both birds and mammals. Both birds and mammals find cover in the vegetation (willows, Russian olive, sage brush, rabbit bush) of the riparian zone lying on either side of the Wasteway, as they forage and pursue other life activities.

B. Land and Shoreline Use

1.What is the current use of the site and adjacent properties?

Hayden Homes responds by indicating that this is "Vacant land of no use." There is no mention of the Amon Basin Natural Preserve that borders the site on the west and southwest. Hayden Homes also fails to acknowledge that such activities as bird watching, educational field trips as well as hiking, bike riding and jogging occur regularly here.

23 August 2013

Rick Simon, Development Services Manager

City of Richland

840 Northgate Dr.

PO Box 190

Richland, WA 99352

Lauren Caslin

8720 W. Falls Ave.

Kennewick, WA 99336

Dear Rick,

I have read the Hayden Homes SEPA checklist for the proposed development of Beer Falls, and am concerned that it illustrates a lack of understanding regarding Amon Basin, Amon Creek Natural Preserve and the general area.

For example, Question #5 in the Environmental Elements section about animals that have been observed on or near the site drew a response by Hayden Homes that "small mammals, such as mice and rabbits are located on and near the site, as well as other mammals indigenous to the City of Richland."

I am concerned about larger mammals and birds that may not be represented by this answer. I have personally seen coyote, even small packs, (as recent as this month) in this land area. I have also seen hawks and herons, red and yellow-tailed black birds, and numerous other animals that I lack the knowledge to list their names.

The Black-tailed Jackrabbit, which also lives in Amon Basin, is listed as a species of concern in Washington State. I did not see mention of this in the checklist completed by Hayden Homes.

For these reasons, I ask that a determination of significance be applied to this SEPA checklist.

Thank you for your service!

L. Caslin

Lauren Caslin

1626 Davison Ave.
Richland, Washington 99354
August 19, 2013

Mr. Rick Simon
Development Services Manager
City of Richland
P.O. Box 190
975 George Washington Way
Richland, WA 99352

CC: City of Richland Planning Commission

Dear Mr. Simon:

Although I do not live near Amon Basin, I've taken a lively interest in Amon Basin as one of the last wetland areas in the Richland city limits. I am writing as a former member of the Planning Commission's Ecology Commission, back in the early 1980's. I've been involved as a volunteer in the clean-up efforts for Claybell Park and the adjacent lands around Amon Basin for the past several years. I also appreciate the City of Richland's need for planned growth, and the City's governance over the years, including its preservation of wetlands, riparian areas, and so forth with city codes and standards.

The proposed Beer Falls development concerns me because it is very adjacent to the Amon Basin wetlands, and if not planned and developed properly, it will adversely impact these wetlands. One example of an adverse impact could be the Basin's having to absorb greatly increased run-off of excess rainfall from the development's many paved streets and driveways, as well as from excess lawn irrigation water runoff. I appreciate that this particular issue is complicated, but I am concerned that Hayden Homes, however well-intentioned they may be, may not have adequately addressed water and erosional issues in their SEPA environmental checklist.

I join many other Richland residents in urging that the City establish and implement existing performance and design standards with regard to any development around the Amon Basin wetlands, including Beer Falls. It is really important that the City both enforces and follows its own laws.

I also urge the City's Development Services Department and Hayden Homes to pay detailed attention to the very thorough responses of the Tapteal Greenway Association to Hayden Home's SEPA environmental checklist. The Tapteal Greenway Association has studied diverse environmental matters and issues around Richland for decades, and truly have enrolled urban development and environmental expertise in developing its responses to Hayden Home's environmental checklist. Tapteal Association members live there and know the area; Hayden Homes personnel, again, however well intentioned, are based far away in Oregon and probably have no residential stake in Richland development nor its environmental features.

I request that the City of Richland Planning department direct that a "determination of significance" be applied to the SEPA environmental checklist, so that Hayden Home's checklist may be sent back to them for further work that would meet the standards laid out in the City of Richland's own laws.

Please accept my comments and petitions in the spirit of continuously improving the City of Richland.

Yours truly,

Charles A. Lo Presti

August 26, 2013

Rick Simon
Development Services Mgr.
City of Richland
P.O. Box 190
975 George Washington Way
Richland, WA 99352

Subject: SEPA Environmental Checklist / Hayden Homes / Beer Falls

Dear Mr. Simon:

This letter is a request for the City Planning staff to initiate a "determination of significance" on the above mentioned project.

Having read the developer's comments, I question issues of runoff and the environmental impact.

I live in one of the surrounding neighborhoods and this residential/commercial proposal will take away so much more than it could ever give to the City of Richland.

Sincerely,

Dorothea Narum
224 High Meadows St.
Richland, WA 99352
(509) 627-3573

317 Fuller Street
Richland, WA 99354

August 26, 2013

Rick Simon, Development Services Manager
City of Richland
P.O. Box 190
975 George Washington Way
Richland, WA 99352

Rick:

I have reviewed the SEPA checklist submitted by Hayden Homes for the proposed Beer Falls development. The cursory checklist responses clearly demonstrate Hayden Homes lack of understanding of the potential environmental impacts their proposed development will have on Amon Basin and on the adjacent Amon Creek Natural Preserve. Even with a hired consultant, the most easily obtained, publicly available, information is not cited in the responses, suggesting the developer did not believe it was important to recognize the values that are present, let alone acknowledge that his actions might have an adverse impact. His statement that "there are no jurisdictional critical areas located on the site", when in fact he will be building on a geologic hazard area recognized by the City of Richland, offers insight into the level of detail and care this developer would bring to the project. No mention is made of Amon Creek or the Amon Creek Natural Preserve directly adjacent and down-gradient from his proposed development. Many other omissions and mischaracterizations appearing in the checklist are discussed below.

The city cannot judge the impacts this project will have based on the poorly researched SEPA checklist and supporting document. Therefore, the City should issue a determination of significance for this development and require that an environmental impact statement be completed by professionals who are better equipped to more accurately describe the resources, potential impacts, and possible mitigation measures. The City will need this study in order to make informed decisions about a development that will forever change the Amon Creek Natural Preserve, an area beloved by many, purchased through citizen action, and cared for by volunteers.

Specific comments follow:

Applicant and their hired consultant state there is no jurisdictional critical area located on the site (A8). This is not the case. City of Richland sensitive area maps published on the City's website show that the proposed development includes a geologic hazard area regulated under city ordinance. Some of the relevant passages from the ordinance (22.10.290) were discussed in my letter of August 8, 2013 and will not be repeated in their entirety here; the August 8 letter, authored by me for the Tapteal Greenway, should be considered a part of my SEPA comments. See also the attached white paper "Geology, Soils, and Geologic Hazards in Amon Basin" for further details. The bottom line is that, at your request, applicant must prepare a geologic hazard report that evaluates both on-site and off-site impacts. Not seeing such a report, I assume you did not make this request. If a finding of non-significance is returned, the finding should clearly state why the City did not believe there would be an impact on this critical area, especially given that applicant estimates 300,000 cubic yards each of cut and fill will be taken through on-site excavation (B1e) and that applicant has no knowledge of unstable soils in the vicinity

(B1d). This despite the fact that knowledge of the suitability of soils for various activities in this area is easily obtained from the USDA Natural Resources Conservation Service (NRCS). The publicly available NRCS database shows that soils in the development area have a high 'K factor' indicating susceptibility to sheet and rill erosion. Soils in the area have 'very limited' suitability ratings for roads (due to slope and frost action) and shallow excavations (expensive installation, poor performance, and high maintenance can be expected, according to NRCS). Soils eroded from this site have nowhere to go other than into Amon Creek and the Amon Creek Natural Preserve. Applicant's lack of knowledge does not bode well for Amon Basin wetlands, nor for unsuspecting homeowners. Geologic hazard report studies should be conducted by a professional engineer before any plats are approved and certainly before any dirt is moved.

Applicant and their hired consultant identify "Amon Wasteway" as the only surface water body in the vicinity of the development. First of all, it must be noted that the Department of Ecology considers this water body to be a "jurisdictional and natural water body" that goes by the name Amon Creek. See for example Ecology's November 12, 2012 comments to Mr. Wes Romine, Kennewick Development Services, regarding Hayden Homes Bridgewater Park subdivision proposal. Applicant has no reason not to be aware of this ruling. Ecology states in their comments that this water body must be protected from stormwater inputs and other water quality impacts.

Secondly, there is a second water body in the vicinity of the development. Applicant fails to identify the west fork of Amon Creek, which is within 200 feet of the proposed Beer Falls development in some places. Stormwater and irrigation runoff on the west portion of the development will drain into Amon Creek and the Amon Creek Natural Preserve. Applicant's responses to all of Section 3 Water refer to "Amon Wasteway" and ignore impacts to the west fork and the Preserve. Furthermore, applicant's responses with regard to water runoff (3c) are disturbingly silent and lacking in any detail, putting into question whether applicant has any concern for or knowledge or appreciation of the environmental resources in the Basin. Given the erodible soils already discussed, what will be the impacts of construction, stormwater runoff (30-40% of the site will be covered with impervious surfaces, B1g), and irrigation return flows (lawns and gardens and the chemicals they contain)? The City and public cannot make this assessment because applicant has not provided a geologic hazard report or any engineering studies. The potential impact is large and a determination of significance is warranted.

Applicant plans to remove all vegetation within the site area (4b). Some vegetation within the "Amon Wasteway" easement will be retained. How much will be retained? How much will be removed? Importantly, the silence on what applicant plans to do adjacent to the Amon Creek Natural Preserve is disquieting. Since the plat runs to the boarder of the preserve, one must assume that all vegetation up to the preserve will be removed. Referencing Ecology's November 2, 2012 letter to Hayden Homes, even well-vegetated buffers of 50' width only trap 65% of the sediment input. They note that less vegetated buffers are less effective and that pollutants are carried by sediment particles. How will applicant's planned de-vegetation impact Amon Creek and Amon Creek Natural Preserve? The same conclusion is reached – you won't know until a professional investigates, and a professional will not investigate unless the City issues a determination of significance.

The vegetation applicant will remove is largely shrub steppe habitat. From the Washington State Department of Fish and Wildlife (WDFW) Priority Habitat and Species (PHS) website, the shrub steppe ecosystem is a priority habitat in Washington State. It is also considered a habitat of greatest concern in the Columbia Plateau by WDFW.

In addition to shrub steppe, other priority habitats are found in the vicinity of the proposed Hayden Homes development as documented by WDFW (but not by applicant):

- Wetlands (Riverine Wetlands) – West Fork Amon Creek
- Palustrine (Aquatic habitat) – East and West Fork Amon Creek

Palustrine relates to a system of inland, nontidal wetlands characterized by the presence of trees, shrubs, and emergent vegetation (vegetation that is rooted below water but grows above the surface). Palustrine wetlands range from permanently saturated or flooded land (as in marshes, swamps, and lake shores) to land that is wet only seasonally (as in vernal pools).

Wetlands in the desert are extremely rare and valuable. Amon Basin is an extremely unique ecosystem where wetland, riverine, and shrub steppe habitats intersect. The freshwater riverine wetlands are some of the most valuable and highly ranking freshwater wetlands in all of SE Washington as determined by Ecology using Ecology's Ranking Criteria. The animals that are associated with the wetlands are present because of the wide buffers and lack of disturbance. The City should do everything in its power to protect these important wetland areas, even in the face of denials that they exist.

The PHS website also documents priority species occurring in the development area. Applicant makes no mention of any of them stating that none are known (5b). Specifically:

- Burrowing owl – State Candidate, Federal Species of Concern, species of greatest conservation need, priority species, foraging
- Ferruginous hawk – State Threatened, Federal Species of Concern, species of greatest conservation need, priority species, breeding
- Townsend ground squirrel – State Candidate, Federal Species of Concern, species of greatest conservation need, priority species
- Black-tailed jackrabbit – State Candidate, species of greatest conservation need, priority species
- Chinook Salmon (Spring Chinook) – East Fork Amon Creek – occurrence/ rearing
- Coho Salmon – East Fork Amon Creek – occurrence/ spawning and rearing
- Steelhead/Rainbow Trout – State Candidate, Federal Threatened, spawning and rearing

Typically, species make the PHS list because of habitat destruction. It is unlikely that applicant's proposed measures to preserve or enhance wildlife will be effective. Landscaping and setbacks may benefit the mice he cites as mammals at the site, but will do little for PHS and other species. A better plan for preserving and enhancing wildlife is needed.

The Lower Columbia Basin Audubon Society has documented 150 species of birds that frequent Amon Basin. Most of these are migratory protected under the Migratory Bird Treaty Act of 1918. Applicant is unaware of Amon Basin as part of a migration route (5c).

Applicant believes there will be no impact to aesthetics (10c). No one that uses and loves Amon Basin will believe this. Amon Basin is used by people who want to re-connect with nature and themselves. They use it as a place to get away from the stresses and noises of everyday life. It's a place for recreation, education, and exercise. They go to observe wildlife, plants, and scenic vistas. A 460 home

development will degrade these uses in a very big way. The lights, noises, and encroachment will be difficult to escape. Applicant has no sense of the impact his development will have on the human environment and quality of life of those who use and live near the Preserve. This is yet another reason a determination of significance should be returned.

There are many, including me, that believe Amon Creek and the Amon Creek Natural Preserve is a cherished resource deserving the strongest protection. They and I disagree with Hayden Home's characterization of this area as "vacant land with no use" (8a). This callous attitude is reflected in a meaningless SEPA checklist submission in which applicant believes there will be no significant impact because there are no significant resources to impact. There are in fact many resources and there will be many impacts. The questions are to what extent they will be impacted and how will those impacts be mitigated or avoided. Applicant's SEPA responses do not help answer these questions. Therefore, the city should issue a determination of significance so that informed decisions can be made.

Please add me to the list of interested parties to receive future notices regarding actions related to the Beer Falls development.

Sincerely,

Mike Lilga

Tapteal Greenway
PO Box 3007 Richland, WA. 99354 509-627-8621 www.tapteal.org

August 8, 2013

Rick Simon, Development Services Manager
City of Richland
P.O. Box 190
975 George Washington Way
Richland, WA 99352

Dear Rick:

The City of Richland has received a preliminary plat application for "Beer Falls", a development proposed by Hayden Homes adjacent to the Amon Creek Natural Preserve. The development area includes lands designated as a Geologic Hazard Area on the City's sensitive area maps. As a result, certain applicant and City actions are required by the City's Critical Areas Ordinance. Some of the relevant sections from the ordinance follow:

> 22.10.290 Administrative evaluation of geologic reports and studies.
> The city of Richland shall review the geologic reports and studies to determine the significant risks posed by the activity to life and property on and off the project site.
>
> B. Application Requirements. The information required by this section should be coordinated with reporting requirements required by this section for any other sensitive area located on the site.
> 1. Prior to the issuance of a SEPA threshold determination for a proposal, a wetland determination, wetland delineation report, wildlife habitat report or geologic hazard report must be submitted to the city of Richland for review upon request of the planning and development services manager if such sensitive areas are indicated on any portion of the site.
>
> 3. Applicants for activities within 200 feet of geologic hazard areas shall conduct technical studies and reports which include the following:
> a. Review site history and available information;
> b. Conduct a surface reconnaissance of the site and adjacent areas;
> c. Conduct subsurface exploration suitable to the site and proposal to assess geotechnical geohydrologic conditions;
> d. Recommend surface water management controls during construction and operation;
> e. Propose construction scheduling;
> f. Recommendations for site monitoring and inspection during construction;
> g. Conduct a detailed stability analysis of the existing landslide that demonstrates that the proposal will result in a suitable factor of safety during and following site development;
> h. Evaluate the presence of geologic conditions giving rise to geologic hazards;
> i. Evaluate the safety and appropriateness of the proposed activities;

Geology, Soils, and Geologic Hazards in Amon Basin

This paper discusses some of the geologic conditions at Amon Basin, in particular the area planned to be developed by Hayden Homes.

Geology

The geologic history of Amon Basin was described well by geologist Dr. Stephen P. Reidel in an article published in the Tri-City Herald for a series called "Northwest Geology". Below are excerpts from an article entitled "The Geology of Amon Basin" written by Dr. Reidel:

> The Amon basin is just north of Interstate 82 at the Clearwater exit. The exact location and a map of the area can be obtained at http://www.tapteal.org/. The basin is part of a continuation of Badger canyon, and the two forks of Amon Creek, although now part of the irrigation system, are natural drainages of the canyon.
>
> The geologic history of the Amon basin begins about 7 to 8 million years ago. At about 9 million years ago the Columbia River was flowing south from Vantage, and across the Hanford Site. However, the river did not leave Washington through Wallula Gap as it does now. Instead it followed the present course of the Yakima River from Horn Rapids Park west, but in reverse. That is, the ancestral Columbia River flowed up the present Yakima Valley toward Toppenish and then turned south to Goldendale and eventually the Columbia Gorge.
>
> This was a time of geologic change in the Columbia basin. The Tri-Cities wasn't the lowest spot in the basin as it is now, but the land sloped westward and all the rivers followed the slope of the land.
>
> Sometime after 8 million years ago things changed. The area to the west began to rise and many of the ridges that now are part of the landscape were growing and becoming significant barriers to the west-flowing Columbia River.
>
> Eventually these developing highlands to the west defeated the Columbia River. The Columbia could have cut water gaps through them, but it was much easier for the river to just change its course and take the easy way out through Wallula Gap. This change of course of the Columbia River marks the birth of the Yakima River.
>
> I'm sure that you're saying this is all nice but what does it have to do with the Amon basin? The answer is that the present course of the Yakima River from Benton City to the delta at Bateman Island is not the original Yakima River. When the Yakima River began to flow west from the Cascades, it turned south at Benton City and followed a course that we now know as Badger Canyon. The Amon basin is part of this original course of the Yakima River.
>
> When you walk the Amon Basin, you don't see much evidence for the old river other than the valley. But look around because there is a rich geologic story. If you look to the west there is Badger Mountain and to the east is another ridge. These two ridges are part of series of hills that geologists call the Olympic-Wallowa Lineament. This feature can be seen on satellite images and, as the name implies, this feature extends across the entire state and northern Oregon. The ancestral Yakima River had to cut its

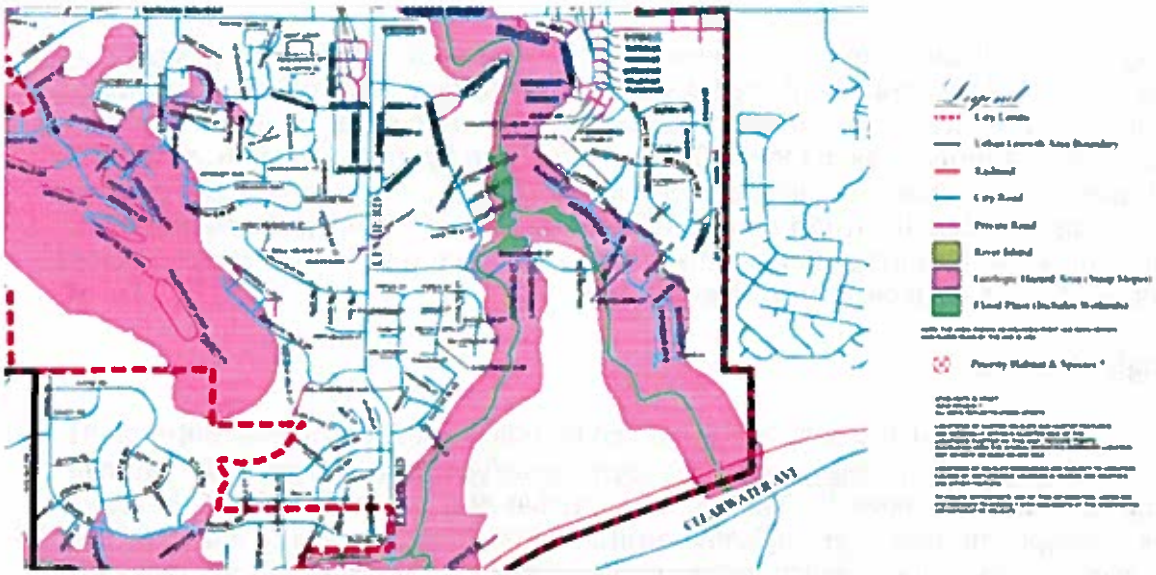

Figure 6. Geologic Hazard Areas in Amon Basin.

Geological sensitive areas require applicant actions according to Richland's Critical Areas Ordinance. Relevant sections from the ordinance follow (less relevant sections omitted):

22.10.290 Administrative evaluation of geologic reports and studies.
The city of Richland shall review the geologic reports and studies to determine the significant risks posed by the activity to life and property on and off the project site.

B. Application Requirements. The information required by this section should be coordinated with reporting requirements required by this section for any other sensitive area located on the site.
1. Prior to the issuance of a SEPA threshold determination for a proposal, a wetland determination, wetland delineation report, wildlife habitat report or geologic hazard report must be submitted to the city of Richland for review upon request of the planning and development services manager if such sensitive areas are indicated on any portion of the site.

3. Applicants for activities within 200 feet of geologic hazard areas shall conduct technical studies and reports which include the following:
a. Review site history and available information;
b. Conduct a surface reconnaissance of the site and adjacent areas;
c. Conduct subsurface exploration suitable to the site and proposal to assess geotechnical geohydrologic conditions;
d. Recommend surface water management controls during construction and operation;
e. Propose construction scheduling;
f. Recommendations for site monitoring and inspection during construction;
g. Conduct a detailed stability analysis of the existing landslide that demonstrates that the proposal will result in a suitable factor of safety during and following site development;
h. Evaluate the presence of geologic conditions giving rise to geologic hazards;

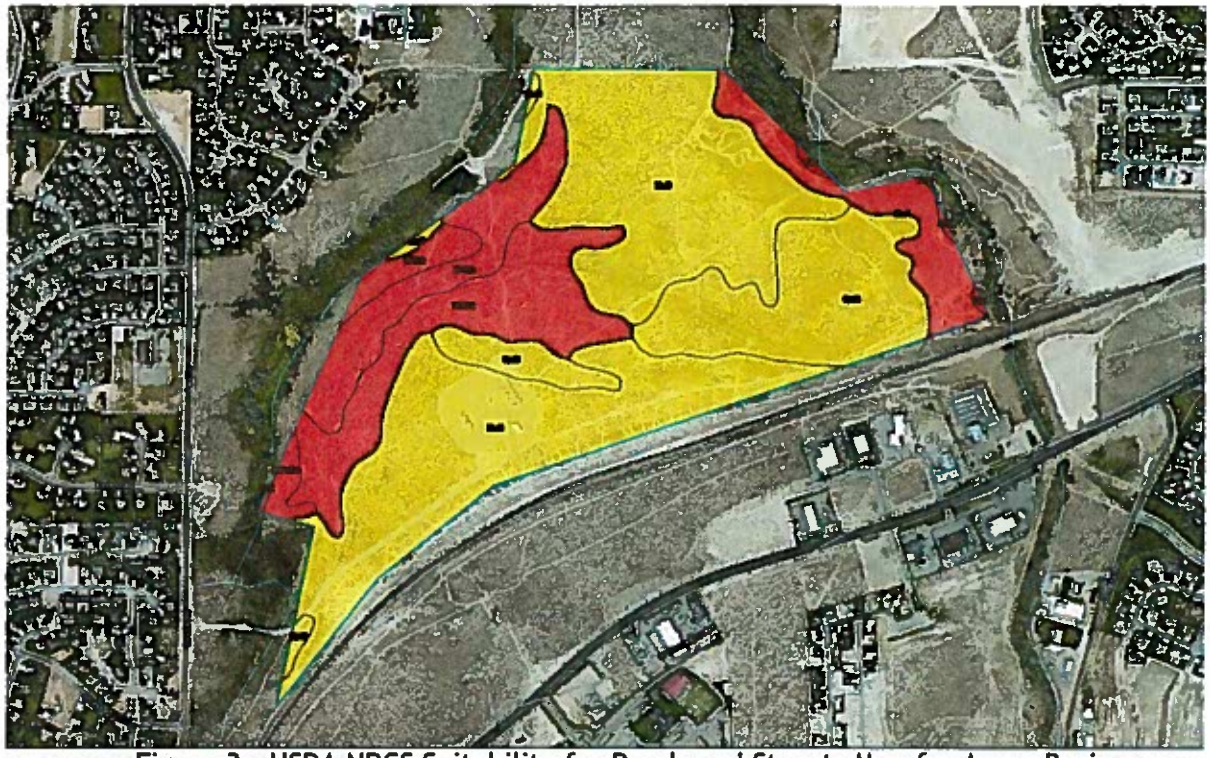

Figure 3. USDA NRCS Suitability for Roads and Streets Map for Amon Basin.
Red = very limited; Yellow = somewhat limited

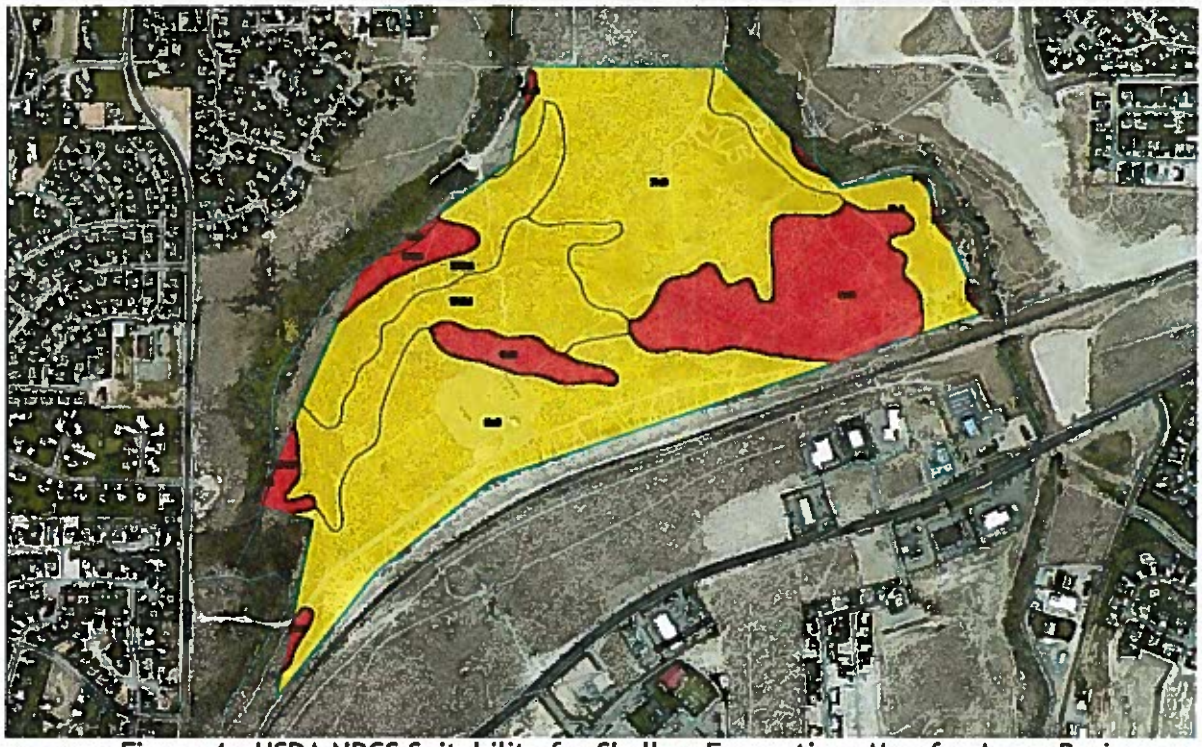

Figure 4. USDA NRCS Suitability for Shallow Excavations Map for Amon Basin.
Red = very limited; Yellow = somewhat limited

i. Evaluate the safety and appropriateness of the proposed activities;
j. Recommend appropriate construction practices, monitoring programs and other mitigating measures required to ensure achievement of the purpose and intent of these regulations. The format of any required reports shall be determined by the city of Richland;
k. A characterization of soils, geology and drainage;
l. A characterization of ground water conditions including the presence of any public or private wells in the immediate vicinity; and
m. Analysis of proposed clearing, grading and construction activities, including construction scheduling; potential direct and indirect, on-site and off-site, impacts from development; and proposed mitigation measures, including any special construction techniques, monitoring or inspection programs (during and after construction), and surface water management controls.

Therefore, applicant should be required to prepare a geologic hazard report prior to preparing SEPA documentation. The ordinance dictates that studies in 22.10.290 B.3.a-m are required. Special attention should be paid to determining impacts to Amon Creek, Amon Creek wetlands, and fish and wildlife resources during and after construction. An assessment of the impacts of surface water runoff and the inevitable rise of ground water levels as irrigation occurs should be made before SEPA documentation is prepared. These kinds of studies must be completed or signed off by a licensed geologist, hydrogeologist, and/or engineering geologist, registered with the State of Washington.

113 Bebb Court
Richland WA 99352
August 20, 2013

Mr. Rick Simon
Development Services Manager
City of Richland
840 Northgate Drive
Box 190
Richland WA 99352

Dear Mr. Simon:

After examining the SEPA Checklist that Hayden Homes submitted for the impending Hayden Homes Beer Falls housing development, I **urge** you to apply a **determination of significance** to the SEPA Environmental checklist for Hayden Homes. Judging from its answers to the checklist, Hayden Homes is ignoring the negative impacts of its development on the neighboring Amon Creek Natural Preserve.

Could it be that Hayden Homes is unaware of its development's close proximity to the Amon Creek Natural Preserve? In a letter dated May 22, 2013, to Hayden Homes, Larry Dawes of Biology Soil and Water, Inc., says he conducted "a Critical Areas and Open Space Assessment" that determined that "there are **no** jurisdictional critical areas located on the site." Unfortunately, Mr. Dawes and Hayden Homes appear to be unacquainted with or perhaps are ignoring the critical area of the west fork of Amon Creek and its wetlands that border the Hayden development on the west and southwest. The Washington State Dept. of Fish and Wildlife has determined this shrub steppe, riparian, and wetland habitat is a "**priority habitat of great concern.**"

With Amon Creek Natural Preserve so close, Hayden Homes **must** address the issues in the RMC 22.10.230 Fish and Wildlife performance standards and incentives. At this point, the Hayden Homes response simply ignores those standards as if they don't apply. How can this be?

Further, in Hayden Home's response to (B. 1.) Land and Shoreline use: 1. "What is the current use of the site and adjacent properties?"--the adjacent land is referred to as "vacant land with **no use**." That is untrue. Citizens from all over the Tri-Cities come to the newly expanded Claybell Park for organized recreation. They also visit Amon Creek Natural Preserve to walk the peaceful trails teeming with wildlife like black-tailed jackrabbits (I saw **six** on my walk today), coyotes, side-splotched lizards, and badgers. The shrub steppe adjoining the riparian areas is extremely rare and prized by many individuals and groups looking to view beautiful native plants. Right now the green rabbit brush is beginning its fall bloom. In the wetlands

adjoining the west fork of Amon Creek, visitors are likely to spot great blue herons, pelicans, egrets, beavers, otters, and many species of ducks. Larger animals like mule deer use the preserve to travel from the Horse Heaven Hills down to the Yakima Wye and back. They often pause to rest during the heat of the day under the trees ringing the ponds.

In sum, Amon Community Natural Preserve is a rich, diverse, and very rare place that **must** be protected. Regardless of Hayden Homes' efforts to portray the area surrounding the Beer Falls Plat as a land "with no use," (5. B), they are wrong.

With their checklist answers bearing so little relevance to and understanding of the reality, I am shocked and disappointed. Hayden Homes either does not realize—or does not care about—the precious and fragile area they are poised to destroy with pesticide and fertilizer run-off, noise, trash, asphalt, and more.

I urge you to conduct a **determination of significance** that will compel Hayden to abide by the Richland City Strategic Leadership Plan, the Comprehensive Plan and the municipal codes already in place to protect rather than degrade the quality of Amon Creek Natural Preserve. That is the only way to create a sustainable, compatible, safe, livable neighborhood in Amon Basin.

Sincerely,

Kathy F. Dechter

Kathy Dechter

Dear Mr. Simon,

My family and I have been following the proposals for development of the Beer Falls area of the Amon Basin. We live nearby, and are very concerned with the plans that we are seeing and the statements made by Hayden Homes concerning the property.

The environmental checklist filled out by a representative of Hayden Homes was a big eye-opener to how the company views the property and the wildlife that lives there, as well as the impact that this development will have on the surrounding neighbors and community. Their answers to the environmental checklist questions show either a lack of knowledge about the area or a lack of respect for the area, or both.

I have two major areas of concern. The first is the wildlife that resides in the area to be developed. Hayden Homes indicated that there are no threatened species that will be displaced by the development of Beer Falls. Ask any second grader who has been on an educational field trip to the Amon Creek Natural Preserve, and you will find out that there are at least two threatened birds (among dozens of other types of birds) as well as black-tailed jackrabbits and American badgers who call the area home. These animals, as well as the many other species of wildlife, need to at least have the migration corridors preserved in order to continue to thrive. My son would also like me to point out that even though Hayden Homes only identified three types of trees as the vegetation existing in the area, there are over 100 kinds of plants that grow in the Amon Basin.

My second area of concern is the proposed re-zoning of the area in order to fit 460 homes in the neighborhood. Hayden homes indicated that the development will not affect the existing services in the area. With 460 homes, there are bound to be children living in some of them. Where will these children go to school? The schools nearby are already full to bursting and turning students away! With 460 homes, the increased traffic will definitely change the character of the surrounding area, and bring more traffic to previously quiet neighborhood streets. Having 460 Hayden Homes on tiny lots with commercial property adjacent will definitely change our way of life in the area, and not for the better. Hayden Homes are known to be lower-end, cheaply built homes and will lower the value of our neighborhoods. Please do not re-zone this area! At least if the homes are on bigger lots, they may have less of an adverse affect on our values.

There are many more discrepancies between the checklist filled out by Hayden Homes and the actual facts. I urge the planning commission to take the time to examine those discrepancies and require Hayden Homes to have qualified experts perform detailed Environmental Impact studies so that the development at Beer Falls can do as little damage to our wildlife, watershed, and neighborhoods as possible.

Sincerely,
Bonnie Mitchell

Dear Mr. Simon,

I'm very concerned about the proposed construction of the sub-division at Beer Falls. This is because I love Beer Falls! I live in Willowbrook neighborhood and our family enjoys walking our dog, Moo, down there. Sometimes we even try to catch lizards! (They always escape!) Sometimes I also like to take a jog down by Beer Falls. The view is gorgeous! One time, my friends and I went down there and played Capture the Flag! It was so fun and there were many great places to hide the flags! On the Environmental Checklist that Hayden Homes filled out for the city, they indicated that there were no recreational activities going on down there. But I've seen many people go running down there, bird watching, dog walking, and many other fun activities! I'm concerned that if the 400 houses are built, these activities will not be possible anymore! My little brother and his class went to the Amon Basin for a school field trip. He told me all about the field trip and it sounded like a blast!

The reason I'm writing this letter to you is because I believe that the Planning Commision should require Hayden Homes to do a more in-depth Environmental Impact Study before they re-develop the Amon Basin environment. Thank you for your time and consideration.

Sincerely, Chloe Mitchell, age 12
205 Piner St.

Dear Mr. Simon

I think that the contruction purposal on the Amon Basin is very bad idea. I am ver concerned about the wild life and the effect on the ecosystem and community. From my research and knowledge I gathered from a field trip in second grade I know several threatned animals that live there that would be put in a bad situation. For example the Ferruginous Hawk a Federal species of concern, Burrowing Owl also a Federal species of concern, Black tailed Jack rabbitts, Also to mention My dog loves playing down there and trust me she's not the only one I see bird watchers trail runners and every one in the community. Hayden Homes obviously lacks any knowledge on the subject and or are trying to lie their way out of not being able to construct. What I am trying to say is that I demand another look at the envior mental checklist

Sincerely,
Someone who cares

Quinn Mitchell age 10
305 piper st Richland WA

RECEIVED
AUG 2 6 2013
Planning &
Development Services

Alexandra Amonette
1939 Marshall Ave.
Richland, WA 99354

August 25, 2013

BY HAND Delivered 8-26-13

Mr. Rick Simon
Development Services Manager
City of Richland
840 Northgate Drive,
P.O. Box 190
Richland, WA 99352

Re: Hayden Homes Development – SEPA Environmental Checklist - Clearwater Creek/Beer Falls

Dear Mr. Simon:

I respectfully request that the City Planning staff conduct a determination of significance on the SEPA Environmental checklist as it applies to the Hayden Homes development proposal. My major reasons for this request follow.

1. The document under review is the environmental checklist. To ensure I am directing my responses to the correct checklist, I have followed this instruction from the City of Richland, "To access the application materials online, start at the City's home page, then go to the Departments tab, then the Community and Development Services tab, then the Development Services tab, then the Clearwater Creek/Beer Falls tab". I obtained the environmental checklist at the following URL: http://www.ci.richland.wa.us/DocumentCenter/View/6924. The File Number associated with the checklist is blank.

2. I have reviewed the subject checklist in its entirety and find that for all of the applicant's responses, the Hayden Homes LLC submitting the Clearwater Creek/Beer Falls proposed project does not understand and know the proposed project site. The Amon Creek Natural Preserve, its wildlife, shrub steppe habitat, wetlands and creek, seems to be nonexistent as far as the applicant is concerned. There is blatant disregard for this ecological area and this is evident by the numerous vague, general, and incomplete responses, missing information, and erroneous responses to the questions in the checklist. **The lack of information must be provided prior to finalizing this document and should be provided during the comment period. Otherwise an additional comment period may be required.**

3. Question #A8, Background, p. 2. The applicant's answer is false and incomplete. There is a large body of environmental information related to Amon Creek and the applicant has not done a thorough job finding that information. Numerous environmental studies have been done on the Amon Creek and wetland and Amon Creek Nature Preserve regarding water quality, quantity, stream flow, flora, and fauna. The applicant could have located these studies and interviewed local experts from the Nature Conservancy, Washington Department of Fish and Wildlife, Native Plant Society, Lower Columbia Basin Audubon Society, and Tapteal Greenway Association, regarding the environment in this area. For starters, why did the applicant not consult the local office of the Washington Department of Fish and Wildlife for information on endangered salmon and critical habitat for their recovery? The applicant must know that millions of taxpayer dollars have been spent on salmon recovery in this region. Amon Creek is a tributary to the Yakima River and salmon live there and require its cool waters for habitat.

fish. A 2008-9 water quality study of the Amon Basin that was funded by the Washington Department of Fish and Wildlife Aquatic Lands Enhancement Association (Project 07-1333) concluded that "in comparison with state aquatic freshwater criteria, the waters of all three streams are acceptable and conducive for aquatic invertebrates and salmonids for the majority of the year, including fall and winter when salmonids spawn. The wetlands provide clean and cool waters and sufficient flow all the way into the confluence with the East Fork".

Furthermore, I believe that the Amon Creek does come under the protection of the State Water Pollution Control Act (90.48) (see http://apps.leg.wa.gov/rcw/default.aspx?cite=90.48) and the Shoreline Management Act (see http://www.ecy.wa.gov/programs/sea/sma/st_guide/intro.html). The latter applies to "…streams and rivers with greater than 20 cubic feet per second mean annual flow; …upland areas called shorelands that extend 200 feet landward from the edge of these waters; and the following areas when they are associated with one of the above: biological wetlands and river deltas; and some or all of the 100-year floodplain including all wetlands with the 100-year floodplain. The Act also states that "the interests of **all the people** [emphasis mine] shall be paramount in the management of shorelines of statewide significance." These special shorelines are defined as: …larger rivers (1,000 cubic feet per second or greater for rivers in Western Washington, 200 cubic feet per second and greater east of the Cascade crest): and wetlands associated with all the above." This certainly applies to Amon Creek, a tributary to the Yakima River, itself a tributary to the Columbia River.

9. Question #B12. Recreation, p. 14. The applicant states that Claybell Community Park borders the north property line of the site and that the project will not displace any existing recreational uses. This is only partly true. The project borders the West Fork Amon Creek, wetland and Amon Creek Nature Preserve. People from the Mid-Columbia region come to hike, view wildlife, bird watch, jog, sit by the wetland, and conduct water quality, flora and fauna, fish and macroinvertebrate studies here. This proposed project will prevent this activity from taking place if it is implemented. Please see http://hiketricities.com/amon-creek/ for a definitive description of the Amon Creek hiking trail in this region. Please also note the comments from users of the trails in "Amon Creek hiking trail" on the above mentioned website. For example:

   "I had an enjoyable hike along the west side of Amon Creek. …the view of this area…are beautiful. …I spotted several ducks… . I also saw quite a bit of evidence of beaver… . There were several birds enjoying the water way. ….there is so much beautiful, twisted, gnarled old-growth sagebrush that is up to six-feet tall with colorful lichens." (http://hiketricities.com/2011/02/01/controversy-at-amon-creek/ as accessed August 25, 2013).

   The website, http://hiketricities.com/2013/06/28/lots-of-wildlife-at-amon-creek/ also provides an extensive list and description of a recent hike to Amon Creek Nature Preserve. This particular hiker saw coyotes, quail, jackrabbits, lizards, and flora and fauna such as yarrow and sagebrush.

   In addition, the East Fork also supports macroinvertebrates, fish, birds, insects, and wildlife. It does contribute "hydrology" during the fall and winter when there are rain and snow events. The applicant has also termed it an "irrigation channel". So-called "irrigation channels" support wildlife and fish.

   I would like to illustrate this latter point with a personal example. When I moved to the Tri-Cities in 1997, I lived in the Creekstone Apartments on Van Giesen Avenue. Behind the apartments flows an old irrigation ditch. It was full of life! There were mallard ducks, blue herons, red-winged blackbirds, carp, minnows, frogs, dragonflies, crows, seagulls, and songbirds. I cleaned it up and pulled a large pile of

14. Question #B5c, Animals. The applicant states **"None known" regarding if the proposed project site is a migration route. This response is inadequate, incomplete, and incorrect. Again, the applicant should have consulted with the Washington Department of Fish and Wildlife to provide a complete response to this question. Of course this wetland and creek and the East Fork are migration routes! Any casual observer will tell you that animals use riparian areas to get from one ecosystem to another for their survival.**

15. Question #B5d, Animals. The applicant has failed to reply to this question regarding the preservation and enhancement of wildlife. The proposed project will destroy the ecosystem. It will destroy the shrub steppe habitat. "Landscaped areas" do not provide the food, cover, and ecological connection with other natural systems that will "preserve or enhance wildlife." Where, for example, will the jackrabbits go? They are not a "small animal" (like a little rodent). Where will the red-winged blackbirds nest when the wetland is destroyed?

16. Question #B8h, Land and shoreline use. Regarding "environmentally sensitive" areas. The applicant states "no". This is incorrect. In fact, according to the description in the City's Sensitive Areas Ordinance, No. 48-93, Ch 22.10 of the municipal code, the Amon Creek Nature Preserve and wetland **is** a sensitive area. The ordinance states, "Sensitive areas perform many important biological and physical functions that benefit the City and its residents. …including….Wetlands…natural ecosystems….they help maintain water quality, store and convey storm water and floodwater, and recharge groundwater. Wetlands provide important wildlife habitat and serve as areas for recreation, educational and scientific study, and aesthetic appreciation."

17. Question #B10b-Aesthetics (views). The applicant state no views will be altered or obstructed. How is it possible that one can develop this area and not obstruct a view? It is impossible.

18. Question #B10c, Aesthetics. The applicant's answer "None, no aesthetic impacts are anticipated" disregards the fact that when you put pavement down where a beautiful rabbit brush once existed, where a lizard crept, where a rare Stork's bill grew you are in fact, impacting the aesthetics. You are destroying the natural environment. This area – the Amon Creek Nature Preserve – is one of the last remnants within the City of Richland that shows us what Tridentata Wyoming sage, desert parsley, sand doc, and long leaf phlox look like. These are beautiful plants. The ordinary person will agree they are more beautiful than a driveway, sidewalk, or street! The proposed project will destroy the wetland and the uplands.

19. Question #B11b, Light and glare. The applicant states that it is "not anticipated" that light or glare will be a safety hazard or interfere with views. If you live in Willowbrook and look east, you will see the lights from <u>460</u> detached single family homes. You will see light and glare from those homes and from the streetlights. I recently stopped walking behind the Richland Airport because now there are homes there in the Horn Rapids Development where I once could take a hike and ride a horse. Gone is the beautiful view of the dunes, and Saddle Mountains to the North of the Hanford Site. Now, all one sees are houses. The same will happen if this project site is permitted to go forward.

20. Section D, SEPA Supplemental Sheet, p. 18. #2. The applicant states that "development of this property will have ….little or no impact on animals and no impact on fish and marine life." This is patently false. They further state there are "no protection measures are proposed" to protect or conserve plants, animals, fish, or marine wildlife. First, this contradicts their response in question B5d. Second, go visit

August 26, 2013

Rick Simon, Development Services Manager
City of Richland
P.O. Box 190
975 George Washington Way
Richland, WA 99352

Gretchen Graber
21 Alta Lane
Pasco WA 99301
206-265-0430

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AUG 26 2013
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CITY OF RICHLAND

Dear Mr. Simon,

I believe a determination of significance should be found in the Hayden Homes LLC, Beer Falls project. The following is a list of reasons I believe a determination of significance should be found.

Goals and policies in the Comprehensive Plan promote the preservation of open space and encourage the best use of existing natural features, open spaces, and structural facilities to enhance recreational opportunities. Implementation of these goals and policies, as well as development and implementation of a regional open space plan will help ensure that designated open space in the Richland UGA is retained.

- Development will occur within the 200 foot buffer of Amon Creek.
- The grading and filling amounts described by Hayden Homes clearly shows no intention to recognize and preserve established vistas, or protect natural features and major drainage corridors. They will flatten the entire site eliminating the existing topography.
- No mention here of the shrub steppe ecosystem considered a priority habitat by Washington State Dept. of Fish and Wildlife and a *cumulative* decrease of over 80% since the early 1900's, in the Columbia Plateau by WDFW. See http://www.wnps.org/ecosystems/shrubsteppe_eco/threats.htm, or attached pdf, *Threats to the Shrub-Steppe.*
- Does not mention the Burrowing Owl, state listed species of concern.
- No mention of reptiles and amphibians that rely on shrub-steppe habitat for all their needs. See http://www.kettlerange.org/steppeweb/attached, or attached pdf, *Shrub-Steppe Conservation Prioritization in Washington State.*
- No mention of Ferruginous Hawk – most of the Basin – Federal Species of Concern, State Threatened. One of the small mammals referred to in the Environmental checklist are called Washington Ground Squirrel (*Spermophilus washingtoni*), they are one of the main sources of food for the Ferruginous Hawk. Link: http://wdfw.wa.gov/conservation/research/projects/shrubsteppe/occupancy_modeling_groun

d_squirrel/. Or see Attached pdf, *Shrub-steppe Ecology, Occupancy Modeling of Washington Ground Squirrels Population.*

- Watch the video "Vanishing Shrub Steppe" by the Bureau of Land Management, on YouTube.

Sincerely,

Gretchen Graber

Graduate Student WSU-TC
School of the Environment
Native Plant Greenhouse Manager
Washington State University Tri-Cities
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Washington Native Plant Society

APPRECIATE, CONSERVE AND STUDY OUR NATIVE PLANTS AND HABITATS

Threats to the Shrub-Steppe

Shrub-Steppe. Photograph by Andy & Ellen Stepniewski. Copyright 2008. All rights reserved.

The primary ecological threats to sagebrush are: habitat conversion; soil disturbance due to heavy overgrazing, motorized recreation or other intensive land-use activities; invasive species; and altered fire regimes. Over 60% of original shrub-steppe habitats have been converted.

Unconverted areas are threatened by a negative feedback loop that combines disturbance, invasion of noxious weeds and more frequent fires. When fragile soils are disturbed and cryptobiotic soil crusts are removed, annual invasive species such as cheatgrass become established. Activities such as heavy overgrazing also can result in removal of palatable native bunchgrasses. Increased abundance of cheatgrass creates a continuous layer of flammable fuel in a system where vegetation is naturally patchy and sparse, separated by areas of cryptobiotic crust. Fire ignitions occur more frequently due to human activities and are then carried more easily due to cheatgrass invasion. Frequent fires remove sagebrush and increase the abundance of cheatgrass. Sagebrush is unable to successfully recolonize when fires occur in rapid succession. In areas where bunchgrasses have been removed due to grazing, little remains following frequent fires except cheatgrass and annual species.

Shrub-Steppe habitat for grasshopper sparrows photographed by Andy Stepniewski. Copyright 2009. All rights reserved.

Watch the video "Vanishing Shrub Steppe" by the Bureau of Land Management.

Primary goals for shrub-steppe conservation include: prevention of habitat loss through conversion; reduction of disturbance activities in unconverted habitat; and restoration of key habitat areas to dominant native species. Shrub-steppe conservation is currently a WNPS priority.

Badger Mountain with West Richland in the background. Photograph by Mickey Hunacek. Copyright 2008. All rights reserved.

More on Percentages and Statistics
The shrub-steppe is an endangered ecosystem. It is estimated that about 12% of a functional shrub-steppe ecosystem remains in Washington and less than 1% is protected in ecological condition similar to the original vegetation. (From Shrub-steppe and Steppe Ecosystems of Washington, Rex Crawford, 1993).

A report prepared by The Nature Conservancy states that at least 80% of the shrub-steppe has been reduced (1996) and much of what remains has been substantially altered. It is an endangered ecosystem because it is estimated that less than 15% remains. (Henjum et al., 1994).

40% of the 10.4 million acres of the Columbia Basin shrub-steppe or approximately 4,160,000 acres are left. Dobler, F.C.J. Eby, C. Perry, S. Richardson, and M. Vander Haegen. 1996. Status of Washington shrub-steppe ecosystem: extent, ownership, and wildlife/vegetation relationships. Washington Department of Fish and Wildlife. Olympia. USA

Updated: January 13, 2013.

Current Research Index
Shrubsteppe Ecology
Occupancy Modeling of Washington Ground Squirrels Populations

For more information on species & ecosystem science:

Wildlife Science
360-902-2515
wildthing@dfw.wa.gov

Fish Science
360-902-2700
fishpgm@dfw.wa.gov

Habitat Science
360-902-2534
habitatprogram@dfw.wa.gov

Species & Ecosystem Science

Shrubsteppe Ecology

Occupancy Modeling of Washington Ground Squirrels Populations

Lead Scientist: Jim Watson

Ecoregions: Columbia Plateau

Ecological Systems: Inter-Mountain Basins Big Sagebrush Steppe, Inter-Mountains Basins Big Sagebrush Shrubland, Columbia Plateau Steppe and Grassland

Project Description

Small mammals are important to all ecosystems, and the shrubsteppe ecosystem is no exception. Ground squirrels and other burrowing small mammals serve important ecologic functions such as reducing soil compaction and improving seed dispersal. They are also important in the food chain and are a dietary staple for a host of avian and mammalian predators.

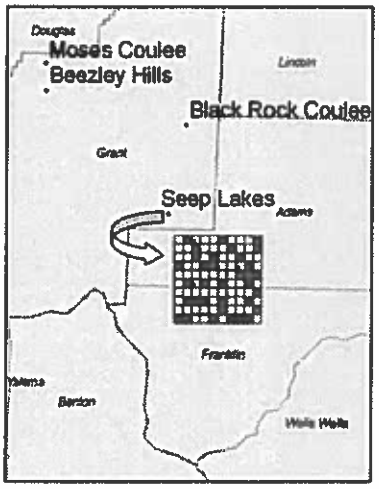
Many native ground squirrels in Washington have declined dramatically in recent years largely due to agricultural conversion and extermination. One of those species, the Washington ground squirrel (WAGS), is a state candidate for listing in Washington and listed as endangered in Oregon. The WAGS has been the subject of considerable research in both states, including habitat and distribution studies conducted by the Washington Department of Fish and Wildlife (WDFW). Locating and cataloguing the small remnant populations of WAGS is vital to maintaining the species, and this information is often gathered by conducting surveys along transects to look for squirrel sign and listen for squirrel calls. The fossorial lifestyle and behavioral mechanisms for predator avoidance make detection of squirrels and inexact science: were squirrels actually present but undetected? What is the probability of detecting squirrels in a population on a given visit if the site is occupied? What environmental factors or survey methods might affect detection? Answers to these questions improve our ability to detect squirrels and help us to interpret the results of our surveys.

Photo by Bob Davies

Washington ground squirrel

In 2008 we initiated a project to model occupancy and detection of WAGS in eastern Washington. We identified four study areas where use by WAGS had been documented in recent years. In each study area we established a 1 km x 1 km grid divided into 100 quadrants, half of which we randomly selected and surveyed for ground squirrels. Squirrels were detected from the presence of scat, vocalizations, or observation. We simultaneously collected information related to survey conditions, such as weather and time of day, as well as quadrant characteristics including visibility, and presence of rock cover. The survey was repeated three times during the season in order to model detection.

We used program PRESENCE to model squirrel occupancy and detection and identify important variables related to these parameters. The entire study was conducted again 2009 to collect information on new variables and refine data collection methods for variables we identified as important during 2008 surveys.



Click on map to enlarge

Four study areas where Washington ground squirrels were surveyed in eastern Washington in 2008 and 2009. The inset shows a hypothetical survey grid with random survey quadrants (blue squares) and squirrel detections (red dots).

Key Findings

- 1,008 surveys were conducted during combined seasons with 366 squirrel detections. The proportion of sites where squirrels were detected at least once (naïve estimate) was in 2008 was 0.52, and 0.63 in 2009. Squirrel detectability was a function of pre-survey counts of recently-used burrows, and surveyor effects, in both 2008 and 2009. Neither relationship was unexpected, because we presumed active burrow counts would provide an index for detectability. In spite of pre-survey training, different abilities of surveyors to detect squirrels still was a factor influencing detection rates.
- The most influential site characteristics related to squirrel occupancy in the 2009 analysis were the degree of shrub cover and protective rock cover, both positive relationships. Badger sign and site visibility, as influenced primarily by ground vegetation, were also positively related to squirrel occupancy.
- Weather conditions were the most influential survey conditions on detections, with higher detection rates a function of lower wind speeds and lower barometric pressure.
- Through the model ranking process we have identified key sampling and site covariates that allow estimation of squirrel occupancy using the most efficient survey methods for detecting squirrels in different environmental conditions.

What's New

We plan to conduct a third season of surveys in 2010 to further refine occupancy and detection

models.

Partners

- U. S. Fish and Wildlife Service, Section 6 Program

Staff

- Scott Anderson
- Todd McCollough
- Robert Davies
- Tiffany Baker
- John Greenfield

Publications

- Occupancy modeling and detection of Washington ground squirrels (*Spermophilus washingtoni*)

Photo by Steve Germaine

Detection surveys were conducted along line transects in areas with previously documented use by Washington ground squirrels

August 24, 2013

Rick Simon, Development Services Manager
City of Richland
PO Box 190
975 George WA Way
Richland, WA 99352

RECEIVED
AUG 2 6
Planning &
Development Services

Dear Rick:

Hello. My name is Brittney and I' am the oldest of 7 with a wonderful husband and a 9 year old daughter. I work in the OR department of Kadlec Hospital and we sure do put in a lot of hours. This last March I had knee surgery of a benign tumor removal. I had just learned to ski and was getting really active outdoors. It wasn't until the more recent years that I discovered all of the beautiful outdoors in my own backyard. I was born and raised in Tri-Cities and I see myself living here till I die. I could not see myself leaving the beautiful hills, sunsets, nature trails, light traffic, and low crimes. Tri-Cities has that big city excitement with a small town flare.

My husband and I had a house built in the Reata Ridge area a year ago now. We chose the location because of the surrounding nature views, trails, and feel. At night the stars in the sky are so bright and mesmerizing. The moon is our light. We moved into this house from the Heatherstone Apartments on Tenth Avenue in Kennewick. I could barely see the night sky there and the stars were faint. My memory of the area was asphalt everywhere, no parking, and around the clock noise. It's unfortunate that that area was allowed to become so over crowded with multiple apartment companies making the environmental quality of the area hard to keep up with.

I have read the SEPA Environmental Checklist that Hayden Homes submitted in regards to the Beer Falls Project. I repeatedly questioned their knowledge of Amon Basin and Amon Creek even existing. The Beer Falls Project and the Amon Creek nearly touch at some points making it so critical that it be included in the checklist. It should be mandatory that Hayden Homes inquire what effect their project would have on the Amon Basin and Creek. There is no physical way that the project will not affect the natural environment and wildlife in the Amon Basin and Creek area. There needs to be a determination of significance to better protect the Amon area that hundreds of people have and can continue to enjoy.

I personally have a long term goal to recover from knee surgery and various disorders that the tumor and surgery have caused and hike through the Amon Basin for my first time. My home is only 3 miles from the Amon Basin and I drive past it daily. I frequently see people out on the trails and remind myself to keep pushing so I too can enjoy what beauty nature has to offer in my own back yard. It would be quite heartbreaking to never have experienced the hike or the natural wildlife in the Amon Basin and Creek.

Thank you for your time and consideration,

Brittney V Tejeda, CST

134 Rachel Road
Kennewick, WA 99338
(509) 551-4543

RECEIVED
AUG 2 6 2013
PERMIT AND INSPECTIONS
CITY OF RICHLAND

Rick Simon, Development Services Manager
City of Richland
840 Northgate Drive
Richland, WA 99352

Dear Mr. Simon:

I have read the SEPA Environmental Checklist provided by Hayden Homes for the Beer Falls project. Attached are my comments to that checklist along with some photographs that will illustrate and support my concerns.

I find many of the developer's responses astounding and altogether naive. The impact of this proposed project is staggering, hugely destructive and forever. There is no turning back once this project is approved and moves forward. What you see in the attached pictures is lost forever. It will never be available for the enjoyment of Richland's citizens or future generations of citizens. It is my hope that the leaders of Richland will recognize the treasure that is the Amon Preserve, the devastating impact this project will have on the Preserve and advocate for its protection and preservation. If they do, they will create a legacy of which every Tri-Citian can be proud.

I respectfully request that the City review my comments to the Checklist and require a Determination of Significance.

Thank you.

Heidi K. Eden

Heidi K. Eden

COMMENTS TO SEPA CHECKLIST

PROJECT NAME: BEER FALLS ("Proposed Project")

DEVELOPER: HAYDEN HOMES (the "Developer")

I respectfully request that the City require a Determination of Significance on the above-referenced SEPA checklist submitted by the Developer. This request is based on the Developer's comments to that checklist and my concerns to portions of that checklist, as outlined below:

Section A. Paragraph 1. Name of proposed project is Beer Falls. This name originated when the area was a local teen hangout and was greatly abused as a dumping ground for unwanted trash and stolen and vandalized vehnicles. For many years, local teenagers would also use the area as a place to drink and shoot coyotes. Thankfully, through the years, the adjacent Preserve has been restored and is now posted to prevent off-road vehicles from accessing its sensitive regions. Local cub scouts and other concerned groups have organized several very successful clean-ups which resulted in the return of the area's natural prestine appearance.

The Developer's use of the name "Beer Falls" is an insult to all the hard work that locals have done to conduct clean ups, erect benches for hikers and families, remove dumped vehicles and restore the area. The name evokes a fair amount of disrespect for the local community in that the name has a sorted history and harkens to a time when the area was abused and degraded.

Section B. Environmental Elements

1a. The developer states: "The site is hilly." Not much thought or consideration was given the Proposed Project by way of that statement. That is a gross understatement. I have attached photographs of the Proposed Site. As you can see, the beauty of the area is magnificent and its topography consists of level ground, interfused with gently sloping hillsides that frame the Amon Preserve on the East.

3a.1. The developer states that there is no other water structures in the vacinity of the Proposed Project besides a simple irrigation canal named the Amon Wasteway. The Developer has not toured the site in person or apparently noticed the large amount of natural waterways directly adjacaent to the Proposed Project. Again, I direct your attention to the enclosed photographs which can more readily depict the adjacent Preserve and the rich abundance of water resources. These water resources will be directly impacted by the vast amount of stated impervious surface (30%-40%) created by the Proposed Project.

3a.6. The Proposed Project abuts the Amon Preserve. It will contain 460 housing units. I am not a waste water expert by any stretch, but there simply is no way that that much

urban development will not affect the adjoining waters of Amon Preserve. The response would seem to defy common sense.

3c.2. "Not likely" A profoundly naive observation. And if it becomes "likely", the developer will have moved on by that time, leaving the future of the adjoining Preserve in peril.

4.a. Again, not a thorough response as to the plant life that exists in the area of the Proposed Project. The area is home to a multitude of native plant life, supporting the animal life that relies on it. The adjacent Amon Preserve hosts a variety of water plants (again, located in the abundant water bodies that the Devloper has failed to make note of in the Checklist). Since pictures speak a thousand words, I direct you to the enclosed photos.

4.c. None known? Is there no requirement that this Developer MUST conclusively determine that there are no threatened or endangered species on or near the site? It would seem to be impossible, then, for the Developer to state in section D7 that:

"The proposal will not conflict with local, state or federal laws or requirements for the protection of the environment."

How can the Developer make such a definitive assurance when it's "unknown" what endangered or threatened species may exist on or near the site?

5. <u>Animals</u>

a. Please see the Tapteal Greenway list of differents birds and mammels that are directly adjacent to or directly living in the Proposed Project. This is not barren, vacant land. This is land that teams with ground nesting birds, coyotes, jack rabbits, snakes, insect life including a vast population of bees, butterflies and dragon flies, water fowl including migratory Canadian geese and song birds. It also has a healthy population of hawks and other raptors, and an occasional deer has been sited on the Proposed Project site, as well. The displacement of this wildlife will be devasting, and the Developer's description is diminitive, uninformed and incorrect.

As stated by Tapteal Greenway, the following have been identified by the WDFW PHS documents:
Ferruginous Hawk – most of the Basin – Federal Species of Concern, State Threatened
Burrowing Owl – vicinity West Fork Amon Creek – Federal Species of Concern, State Candidate

As concerns the Ferruginous Hawk, please consider the following facts:

- **Declines are mostly due to loss of quality habitat**. [EMPHASIS ADDED}
- Although flexible in choosing a nest site and exhibiting a high reproductive potential, this bird's restriction to natural grasslands on the breeding grounds and specialized predation on mammals persecuted on rangelands may make conservation a continuous concern.
- Historically, the birds entirely disappeared from areas where agriculture displaced the natural flora and fauna; for example it was noted in 1916 that the species was "practically extinct" in San Mateo County, California.[2] Studies have found that prairie dogs can be a main prey item for Ferruginous Hawks, linking them to the populations of prairie dog towns in the mid-west and southwestern United States, which have been declining in recent years.
- This bird may also be sensitive to the use of pesticides on farms; they are also frequently shot.
- Threats to the overall population include:

    - **cultivation of native prairie grassland and subsequent habitat loss**
    - tree invasion of northern grassland habitats
    - reductions in food supply due to agricultural pest management programs
    - shooting and human interference

b. Please see 5a. above. "None known" is a frighteningly naive response.

c. Please see 5a above. "None known" is a frighteningly naive response.

d. Please see 5a above. Please review the enclosed pictures. Please ask the Developer to explain how the pictured wildlife will manage to survive in small landscaped "setbacks" that will be excessively fertilized, watered and mowed to achieve an artificial "wilderness." The existing cover works quite well for the pictured wildlife. Asking that wildlife to "survive" in artificial "nature" setbacks that exist between the paved roadways and sidewalks/driveways is like asking your average American to survive in Sudan.

8. Land and shoreline use

a. What is the current use of the land? The Developer states that is vacant with no use. That is completely incorrect. The land is currently used by a multitude of community members including mountain bikers, occasional horse back riders, hikers, families walking with their children and runners. The adjacent Amon Preserve has been used by local community groups to conduct tours explaining the various wildlife and plant life as well as the geologic history of the area. Local cub scout troups have spent countless hours building paths, erecting signage and benches and conducting clean ups of illegally dumped trash. In addition to all the human enjoyment that this "vacant" land provides, it also supports a wide abundance of plant and animal life. The definition of "useless" is

having no practical use or advantage. The uses and activities described above defy the definition of "useless."

10. Aethetics

b. Instead of answering no to that question, please ask the Developer to look at the enclosed photographs and tell you that no views will be obstructed by building 460 housing units in the Proposed Project.

c. See section b above.

12. Recreation

b. Please see 8a above. The area of the Proposed Project and the adjacent Amon Preserve is in constant recreational use, 7 days a week, and in all kinds of weather. Contrary to the Developer's opinion, it is not useless nor is it barren. It's rich in plant and animal life and provides countless hours of recreational opportunities to local hikers, walkers, mountain bikers and runners. I hike the Preserve and the Proposed Project area every day, year round, and I am never alone out there.

14. Transportation

f. The Proposed Project will generate 4,403 average daily trips for the residential portion of the Project, yet, according to the Developer, there will be absolutely no impact from the project on the environment, the adjoining Preserve, the "non-existent" waterways in the Preserve or the wildlife in the area. That is truly remarkable, and complete nonsense.

D. SEPA Supplimental Sheet for non-project actions:

1. See the concerns stated under 14f above.

2. This response is almost impossible to address because it's absolutely ridiculous. Please look at the enclosed pictures. There can be no doubt that this Proposed Project will be DEVASTATING to a wide range of plant and animal life. The Developer states that it will simply remove "small patches of grass and sagebrush" and then build 460 housing units that will result in 4,403 road trips a day. The Developer further states that those homes/commercial development and road trips will have absolutely no impact on the animal and plant life depicted in the attached pictures. That response is insulting.

4. How can the Developer say that no measures are necessary to protect environmentally sensitive areas when the Develper states: "There are no known sensitive areas on the subject property?" Bottom line: The Developer doesn't have any idea what is in the

Proposed Project area in terms of environemntally senstive areas. Therefore, what you don't know (or choose not to know) is not in need of protection.

6. What about a school? The Developer proposes that 460 childless persons will buy these homes and not put any added stress on existing classrooms? Of course not, since the standard response is they don't know and if they don't know, they have no duty to plan for or pay for the impact such a Project will have on local schools.

Roberta D. (Bobbie) Bull
1928 Meadows Drive North
Richland, WA 99352
(509) 628-0818

Rick Simon, Development Services Manager
City of Richland
840 Northgate Drive; Box 190
Richland, WA 99352

Dear Mr. Simon

We chose to retire in Richland for what we felt to be its many positive attributes. Near the very top of that list was what we perceived to be a nice balance between development and open spaces. Since we moved from north Richland to south Richland in 2000 we have seen those open spaces and ridgelines disappear. One of the places most near and dear to us is the Amon Basin Natural Preserve, hence forth referred to as the Amon Preserve. I was dismayed to hear about the proposed Beer Falls development. Having said this I am well aware that development cannot be stopped, but as a citizen of Richland I feel I have a right to expect that any development that does occur follows the city's guidelines and ordinances. A read of the SEPA checklist submitted by the developer, Hayden Homes, leads me to think the developer has either no regard for those expectations or an appalling lack of understanding of the area. The misleading information included clearly does not permit an accurate assessment of the impact of this development. The suggested mitigation measures are inadequate. **For this reason I am asking that a determination of significance be applied to the checklist.**

Volumes could be written in support of this request. However, for the sake of brevity I will focus on what are the most egregious and blatant problems:

- With respect to item B. Environmental Elements, 1. Earth. a-it is evident that the area is "hilly", but what is not addressed is what lies near and under those "hills", i.e., the Amon Preserve and Amon Creek. This a unique shrub-steppe and riparian area where a whole lot of people have spent a whole lot of time working to preserve something very special for the residents of Richland. Since water flows downhill, the preserve and creek are likely to be the unlucky recipients of all manner of unwanted detritus both during construction and after development.
- Item B.1.f and h, which is the discussion of erosion and erosion control. I walked through the preserve following a rain in May of 2011 and was shocked to note terrible erosion. I happened to have my camera with me and took the enclosed photographs. Can serious erosion occur?...obviously! Not only can it occur, but it will be much more likely to happen following the massive movement of land and destruction of the natural drainage system described in the checklist. The present system has been in place for eons and will require significant mitigation to replace. A vague reference to a "specific erosion plan" will not suffice to protect the downhill areas. I would like to see specific plans required as part of the pre-approval process to minimize the potential for negative environmental impact to surrounding areas.
- Item B.3.water.surface requesting identification of any surface water body on **or in the vicinity of** the site. Mention is made of the Amon Wasteway, but absolutely no mention is made of Amon Creek. I have not had the opportunity to make actual measurements, but feel reasonably certain that Amon Creek lies within 200 feet of the proposed site in at least some areas.
- Item B.3.water. runoff-the comment is made that storm water is **LIKELY** to be infiltrated into the ground through dry wells. Given the damage evident in the enclosed photos, **LIKELY** appears to be an unacceptable plan, the failure of which is potentially devastating. Runoff should be addressed via a clear management plan reviewed by independent experts before development.

- Item B. Environmental Elements. 4 Plants and .5 Animals-The answers to questions about plant and animal life "observed on or NEAR the site" appear to be dismissive of the immense diversity of plant and animal life living here, referencing only "small mammals such as mice and rabbits and other mammals indigenous to ...the area" and "shrubs, grasses and other deciduous trees". I have had the privilege several times of touring the Amon Preserve with individuals knowledgeable about both the flora and fauna. Rather than taking the time and space to individually list all of them, a summary follows. I have personally observed and/or noted dens of mammals such as deer, beaver, otters, coyote, badgers, lizards, reptiles, and black-tailed jackrabbits. I have seen dozens of shrubs, grasses and trees, many unique to this area. The local Audubon Society has documented close to 150 species of birds. Some of these are threatened species or species of concern, e.g. the Ferruginous Hawk and Burrowing Owl. Most important is the fact that once removed or displaced it will take years to restore the diversity of this very fragile shrub-steppe environment. Removing "all vegetation within the site area" and the intent replace it with "native landscaping" is a naïve plan revealing a lack of understanding of what a difficult process this is. I have been involved in restoration efforts to damaged areas of the Amon Preserve...the success rate is limited even when extreme time and effort is involved. A better approach might be to selectively clear areas, maintaining as much natural vegetation as possible, as development occurs as opposed to razing the entire site.
- Item B. Environmental Elements.8. Land and shoreline use-This is the most blatant error in the checklist. To answer the question "What is the current use of the site **and adjacent properties** with "vacant land with no use" simply ignores reality. The Amon Preserve is situated on the west/southwest of the proposed site. Claybell Park and its surrounds are on the north. These areas are used and enjoyed by many. At the very least effort should be undertaken to document actual use as opposed to simply ignoring the areas. I have personally enjoyed exploring these areas to observe the inhabitants and flora and know that they have been used by school groups, scouts and others in the Richland community.
- Equally disturbing is to answer the question what views in the immediate vicinity would be altered or obstructed? with "none". It is as if the respondent has not even been to the area, let alone imagined how very different the views from the Amon Preserve and Claybell Park will be when replaced by some 460 housing units.

The above list represents a small number of concerns, but will have to suffice. In summary, I have no interest in halting development in the City of Richland. At the same time I recognize that we are fortunate to live in a pretty unique area of critical shrub-steppe habitat that is rapidly vanishing. I expect that development occurs with adherence to established city/state/federal rules and regulations and with respect for minimizing damage to the environment. The checklist submitted by Hayden Homes provides little assurance of even minimal protection. I again ask that a determination of significance be applied to the checklist the developer has submitted. Please notify me of any decisions made relative to this application and of proposed hearings.

Sincerely,

Bobbie Bull

Bobbie Bull

RECEIVED
AUG 2 6 2013
Planning &
Development Services

Rick Simon

SUBJECT: Beer Falls Plot Plan--SEPA Response

Mr. Simon,

I am writing in response to the subject document. I have reviewed many such documents and could list a number of problems with this document. However, I will restrict my comments to the document's handling of the Amon Creek area. Residents of Richland have spent significant time and money over the past few years to protect the Amon Creek area as a significant environmental resource for the community. The Beer Falls SEPA response dismisses the Amon Creek area as a non-important factor, either ignoring the citizens efforts to protect the area, or being completely ignorant of the citizens concerns. No mention is made of any actions to prevent or mitigate damage to the area.

I strongly request a finding by Richland that the SEPA document is inadequate.

Jerry White

2301 Concord Street
Richland WA 99352

August 25, 2013

Rick Simon, Development Services Manager
City of Richland
840 Northgate Drive, Box 190
Richland WA 99352

Dear Rick:
As a citizen of Richland, I want to comment on the SEPA submitted by Hayden Homes on June 14, 2013 for the Beer Falls development. I am not opposed to development, but I do feel it should be done to the performance design standards set forth by the city in the strategic leadership plan, comprehensive plan, zoning, and codes; and include a proper SEPA document. Inaccurate or incomplete information appears to be present in the Beer Falls SEPA document, and should be addressed.

I want to highlight three separate examples:

1. Pg. 7 & 8 (3)(c)(2) asks, "Could waste materials enter ground or surface waters? If so, please describe." The response listed is "not likely." However, elsewhere in the document, it is mentioned that the site is hilly and has steep slopes. The land slopes downward toward Amon Creek, meaning all runoff (including waste materials such as fertilizers and other household waste) from the 30-40% conversion to impermeable surfaces will likely drain downhill straight to the creek. Or, if drywells are implemented, as mentioned in the response directly above this question, it will still have impacts on ground water.
2. Pg. 11 (8)(a) asks, "What is the current use of the site and adjacent properties?" Hayden Homes' response is "vacant land with no use." This statement severely overlooks the importance of recreation, biodiversity, wetlands, habitat, and ecosystem services for the Richland community claiming that the Amon Basin Preserve is of *no use*.
3. Pg. 18 (D)(2) asks, "How would the proposal be likely to affect plants, animals, fish, or marine life?" The response states, "The development of this property will involve removal of small patches of grass and sagebrush, however there is little to no impact on animals and no impact on fish and marine life." This answer is inaccurate. In order to accommodate 400+ homes, the patches of grass and sagebrush removed will be much more than "small patches." Additionally, converting a remaining intact shrub steppe ecosystem to impermeable surfaces of homes and pavement will absolutely impact the entire ecosystem, including animals, birds, and fish in Amon Creek and further downstream.

Please consider these points of inaccurate or incomplete information as you move forward through the process regarding Beer Falls development. This area is very important to the citizens of Richland, as well as the natural resources that provide us a high quality of life. As is, the SEPA does not contain complete and accurate information in order to determine adverse environmental impacts, and therefore cannot lead to a determination of non-significance.

Sincerely,

Alison Greene

Alison Greene
360-241-9618

August 26, 2013

Rick Simon, Development Services Manager
City of Richland
840 Northgate Drive
Box 190
Richland WA 99352

Dear Mr. Simon:

This letter represents my plea to the City of Richland to apply a determination of significance to the proposed Beer Falls development by Hayden Homes. I read through the answers by a Hayden Homes representative to the SEPA checklist and was surprised, actually disgusted, by the apparent lack of due diligence applied to many of the factors on the list. The fact that this high-intensity housing proposal is adjacent to a natural preserve, Amon Creek Natural Preserve, lends itself to careful scrutiny by Hayden Homes on all fronts, but particularly the potential environmental impacts. The Richland Municipal Code, Strategic Leadership Plan and Comprehensive plan were created to protect places like Amon Creek Natural Preserve, and City of Richland needs to utilize these tools to do so.

In Policy 4 of Richland Comprehensive plan goals it states: ***Landscape design should respond to our desert environment by utilizing a variety of landscape materials indigenous to this arid region.*** The applicant stated in the SPEA environmental check list that the proposed landscaping will <u>include</u> native vegetation. I ask that the commission add a design standard that enforces Policy 4 and goes beyond the developer's mention of <u>including</u> native vegetation. Many of the species that call Amon Creek Natural Preserve home depend on the native vegetation for survival. It is imperative that Hayden Homes makes a thorough plan for requiring native landscaping to replace what is lost during construction.

Amon Basin is a jewel in the midst of the City of Richland that desperately needs preserved. I once again urge the City of Richland to apply a determination of significance to the proposed Beer Falls development, and that the City implement the design standards that were established to protect valuable resources like Amon Basin.

Sincerely,

Karen Sowers

Karen Sowers
227 Sitka Ct.
Richland, WA 99352

August 26, 2013

Rick Simon, Development Services Manager
City of Richland
P.O. Box 190
975 George Washington Way
Richland, WA 99352

Dear Rick,

The SEPA checklist for the proposed "Beer Falls" tract of Hayden Homes is a joke!

The City clearly must declare a **Determination of Significance** on this application - the damage done to the community would be irreparable. At the very least the SEPA checklist must be re-done. The flaws are very significant and include completely inaccurate assertions such as the soils are stable, there is no wildlife, no recreation, and that existing services will accommodate the proposed residences.

When Ron Asmus first came in with his ridiculous SEPA checklist for the Heights at Meadow Springs, it was equally flawed. Regardless, you - Rick Simon - rubber stamped it. I appealed. But you got away with your approval because I failed to deliver the appeal to the correct office. The City got away with sloppy permitting and destruction of sensitive habitat partly because of my mistake - NOT BECAUSE YOU DID YOUR JOB!

More recently, the City had been doing a good job of protecting habitat partnering with Tapteal Greenway, Friends of the Amon Basin, and Friends of Badger.

I hope that you will not allow this tract to move forward as proposed. Doing so would be a slap in the face to the many residents and volunteers who've worked to protect and improve the basin. That includes numerous Scout troops and individual Eagle Scouts.

Attached are my comments point-by-point on the flawed checklist. Again, it deserves a Determination of Significance.

The City must require Hayden Homes to do a thorough and complete checklist - prepared by someone who, oh, I don't know, actually walks around down there?

Anyone can pull the basic data from the soil classifications reports. But knowing what it means, how much dust will be created, how much erosion, and how control is so difficult - that should require review by a licensed geologist. Perhaps if the City required robust environmental checklists and proper geologic evaluation - and not built on wetlands- there wouldn't be water in the crawl spaces at Applewood Estates.

Another concern is that of proximity to the train tracks. The trains are noisy at my house, a mile away. They sometimes wake me up at night. Does the City have any responsibility to future residents to require a sound wall of some sort? Does the City have the emergency preparedness capability to handle a derailment if one occurred?

Further, I want to know - with numbers - how the tract would impact Richland Schools and whether it would mean there are portables at the new schools right away. What will the projected population be at the homes off Dallas, combined with these?

Perhaps the City could partner with the Port of Kennewick and buy the land adjacent to Claybell to preserve that habitat. The Ports are supposed to do things that benefit the public within their taxing district. That would be an appropriate use of funds for residents of east Kennewick and S. Richland who seldom go to Clover Island, but pay an assessment.

Or, could the City trade City-owned land in the Horn Rapids triangle? Why not push some residential development NORTH to schools that aren't overcrowded. It would require a zoning change, similar to the one being requested - and plenty of commercially developable land would still remain. Besides, we already put in the trunk lines to Horn Rapids, why not add more homes to pay for them?

Lastly, if the City feels it must accommodate the developer, you could suggest they develop the commercial area only. The habitat adjacent to Steptoe is already destroyed. Use the comprehensive plan as a guide. Build a Neighborhood Activity Center. This might actually HELP south Richland - and neighboring Kennewick and Hansen Park. If we had a dense, mixed use commercial district we could walk and cycle to, that would be really cool.

Please, Rick, do your job. Honor the Comprehensive Plan. Follow the laws of the state designed to protect habitat, species, and water quality.

Thoughtfully submitted,

Ginger B. Wireman

Ginger Wireman
2435 Michael Ave.
Richland, WA 99352

CC:
Richland City Council
Richland Planning Commission
Richland School Board
Nathan Machiela, Hayden Homes
Cathy Reed - Wetland Regulatory Process & Permits, Dept. of Ecology, Yakima
Donna Bunten - Critical Area Ordinance Review Coordinator, Dept. of Ecology, Lacey

To: City of Richland Development Services, Richland City Council, Richland Planning Commission,
Nathan Machiela, 2464 SW Glacier Place, Suite 110, Redmond, OR 97756

RE: Beer Falls by Hayden Homes, LLC
Detailed Comments Submitted by: Ginger Baird Wireman, 2435 Michael Ave. Richland.

SEPA questions are numbered.
The Hayden responses with which I take issue are in italics, Times Roman.
My answers are in Calibri.

6. Proposed timing or schedule (including phasing, if applicable):
The proposed application is for a phased master planned commercial and residential development to contain a total of 20 phases. Development will start on the residential portion of the site when all permits are approved. It is unknown when the commercial portion of the site will be developed.
How long will 20 phases take? How many years will adjacent residents be inconvenienced by noise and dust. Currently, the Heights at Meadow Springs is working on phase two or three. It is difficult to enjoy one's yard with the constant beeping of construction trucks year after year. The dust is also a constant threat to downwind neighbors.

8. List any environmental information that has been or will be prepared related to this proposal.
There has been a critical areas assessment performed by Biology Soil & Water Inc.. A letter dated May 22, 2013 notes that there are no jurisdictional critical areas

11. Give a brief, complete description of your proposal, including the proposed uses and size of the project and site.
The proposed application is for a master planned commercial and residential development. The application will require a Comprehensive Plan Amendment to change the designation of 16.45 acres from Low Density Residential to Commercial. The proposal also involves a change of zone of 16.45 acres from Agricultural (AG) to Neighborhood Retail Business (C-1),a change of zone of 6.92 acres of Single Family Residential (R-1-10) to Medium Density Residential (R-2S),a change of zone of 19.01 acres from Agricultural (AG) to Natural Open Space (NOS), and a change of zone of 89.59 acres of Agricultural (AG) to Medium Density Residential (R-2S). For the residential portion of the site a preliminary plat application has been submitted for a 460 detached single family lot subdivision. A more formal site plan application will be submitted for the commercial portion of the site. It is unknown at this time how or when development will occur on the commercial portion of the site.

Richland's Comprehensive Plan includes the concept of "Neighborhood Activity Centers." Dispersed throughout the City, these areas will bring together housing, commercial development, recreational facilities, and other urban features..." Hayden Homes does not do commercial building to my knowledge. It would be helpful for the City to become involved and ensure that as they develop the commercial portion of the site a concerted effort is made to create the mixed use, Neighborhood Activity Center outlined in the Comp. Plan. Particularly, current parking requirements should be cut down to minimize impervious surfaces and heat islands and encourage neighbors to walk or cycle to the businesses. Further, while the density of the proposed "Beer Falls" is very high, it doesn't include adequate access to the park or surrounding area as would be encouraged in a Neighborhood Activity Center.

B. Environmental Elements

1.Earth

The SEPA checklist claims that is that the soils are not unstable, but there is sand across much of the site. Clearly that is not stable soil. Further, there are caliche clay layers on site. These have been known to make drainage difficult or impossible without additional effort (Venus Circle). The SEPA developer estimates about 30-40 percent of the area will be covered by impervious surfaces after development. At ten percent impervious surface, water quality begins to degrade. http://water.epa.gov/polwaste/nps/urban_facts.cfm The east fork of Amon Creek (called Amon Wasteway) DOES have water in portions of the channel year round. That water drains to Amon Creek, which drains to the Yakima River.

2. Air

The SEPA checklist claims there will only be small amounts of dust, and that *"the dust would be mitigated by the use of a water truck during construction."* What about between phases? What about land that's graded and platted, but not built on? Efforts to mitigate dust by local developers has been fairly useless. I am downwind of The Heights at Meadows Springs and have suffered constant sand blasting through the first five years of that project. The phase two area is barely maintained. The City, and/or Benton Clean Air Authority are apparently unable to ensure proper and complete dust control. Milo Bauder's development on the ridge of Little Badger has the same problem.

b.) The SEPA checklist claims there will are no offsite sources of emissions which will affect the proposal. There are currently coal trains using this track to move coal to Auburn, WA. If the coal train export terminals are approved, there may be an additional 15 trains a day. While the coal companies claim surfactants can keep the coal (in uncovered cars) from losing dust, there is evidence to the contrary.

c. The SEPA checklist claims "*the project construction will utilize a water truck when operating during dry conditions. The project will have an erosion control plan in place to suppress derelict dust.*" The water trucks should be kept full at the end of the work day and the neighbors or police should have a number to call to get the water truck driver out when workers aren't on site. Even if we report the problem to the City or Benton Clean Air Authority, they only work weekdays, so often times the damage is done before any water trucks are put to use. Most local residents do not know the process to report a violation.

3.Water

a. Surface Water:

1) The SEPA checklist states there is *"no hydrology within the channel during the fall or winter. The irrigation channel is not classified as a stream or river."* While it is not classified on a map as a stream, the channel does have surface water and groundwater year round at approximately this location (plug into Google Earth): 46.214199,-119.251592. The soil along the eastern portion of the proposed plat is very hydric. Horsetail sedge – a wetland plant – grows everywhere.

2) Additionally, a few small trail crossings may be constructed in association with a planned neighborhood path system. The plat plan on file does not show space for a neighborhood path system. I strongly encourage the City to require the approved plat plan SHOW easements to the path and to Claybell Park from within the tract to ensure this assertion becomes a reality.

c. Water runoff (including stormwater):

1) The SEPA checklist says *"Stormwater will be collected from impervious surfaces on the site. Then the stormwater will likely be infiltrated into the ground through drywells that have been engineered and approved as an appropriate method of stormwater management for site runoff."*

Again, special attention should be paid to caliche soil to ensure stormwater is adequately treated and managed. Because the site is next to the 'drain' perhaps an effort could be made to incorporate stormwater treatment into a small man-made wetland feature that actually improves the neighborhood instead of providing an ugly wasted, fenced lot as in Venus Circle.

The accumulation of runoff from the housing tract's 30-40 percent impervious surfaces (combined with runoff from The Heights at Meadow Springs and future commercial development,) could turn this into a year round water course in some wet years. Special attention should be paid to ensuring the water entering Amon Creek at the golf course isn't super-heated from contact with asphalt. Amon Creek has very good water quality now, and is refuge for salmon and trout.

2) Could waste materials enter ground or surface waters?

d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any: *Stormwater will be collected within catch basins and pipes and will be infiltrated to prevent runoff impacts.* See section C.1 above regarding possible problems with caliche soil.

4. Plants

The SEPA checklist says: "*Next to the irrigation channel there are thickets of willow and Russian olive and a few cottonwoods.*" In addition the eastern edge of the site has horse tail sedge, a wetland species, indicating very hydric soils. Further, most of the site has shrub steppe habitat, which is important to the animals and birds living there.

b. What kind and amount of vegetation will be removed or altered?
All vegetation will be removed within the site area to be developed to accommodate grading activities including utility extensions and construction of stormwater management facilities. Some of the area within the Amon Wasteway easement and areas along existing power lines will remain undisturbed.

c. List threatened or endangered species on or near the site. *None known.*
Less than 10% of the shrub steppe habitat remains in Eastern WA. Shrub Steppe is a habitat of concern that supports species of concern. This plot will be missed as a habitat space that was connected to the Horse Heavens, Yakima River and Bateman Island.

d. List proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site:
The proposed landscaping will include native vegetation. In addition, non-developed areas of the site will be left in their natural state.

This section is in direct conflict with section B above which states *All vegetation will be removed to accommodate grading activities.* Every effort should be made to leave stands of sage, bitterbrush and native grass and soil crust. Landscaping later with 'natives' is extremely difficult and likely to fail. Mitigation measures should be planned for the riparian portion of the property, with care and attention paid to weeding the areas until native plants are established. The city has a history of allowing 'mitigation' in a plan only to let it fail. Willow Point Townhomes project in N. Richland destroyed the shoreline habitat and now it is covered with noxious weeds. The residents have also cut down the actual native plants that were planted as part of the 'restoration'.

5. Animals

a. Circle any birds and animals which have been observed on or near the site:
There are small mammals, such as mice and rabbits located on and near the site as well as other mammals indigenous to the City of Richland area.
The level of ignorance in this response is very insulting! There are heron, egret, songbirds, coyote, black tailed jackrabbit, there are beaver adjacent, and salmon not far downstream. Ferruginous hawk, as federal species of concern, and state threatened, also nest in the area.

b. List any threatened or endangered species known to be on or near the site. *None known.*
Salmon have been observed in Amon Creek. As such water quality is a major concern.
The Black Tailed Jackrabbit is a WDFW species of concern. Quick, kill 'em off before that happens right?

c. Is the site part of a migration route? If so, please explain.
None known.

d. List proposed measures to preserve or enhance wildlife:
Landscaped areas and setbacks will provide forage and cover for small animals and birds. If this tract is approved it will probably be the death knell for the wildlife corridor that now allows wildlife to sneak from the Horse Heavens to Bateman Island. This proposal is VERY, VERY sad.

6. Energy & Natural Resources

a. What kinds of energy ... *This project will primarily utilize electricity for heating, lighting, and mechanical operations. Natural gas may also be available.*
Could the site employ geothermal or other energy efficiencies? Could Richland become a leader in encouraging and

implementing alternative energy projects? The homes closest to the RR tracks (south side of tract) could install small wind turbines and contribute to the city's power supply. We could phase out our reliance on BPA and others if we had 'home grown' electricity sources.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts: *The construction of this project will be executed in accordance with the current energy standards required by Washington State and the International Building Code.* BUT Could the city be better? Use smart grid technology developed by PNNL?

7. Environmental Health

b. Noise

1) What types of noise exist in the area which may affect your project (e.g., traffic, equipment, operation, other)?
The primary source of noise generated off-site would be from vehicular traffic which will not affect the project.
The site may not get highway noise, however we do hear the highway in Meadows East. The trains are another story. There are at least ten trains per day. The trains are loud. They sometimes wake us up at night. The train whistle for the grade level crossing at Cottonwood Springs may also be very loud at this location. I imagine that the rails are close enough to the proposed site that they will shake the ground in addition to being loud. People should be alerted to the trains when considering purchasing in this neighborhood as the noise could be a serious quality of life issue.

2) What types and levels ... *Short Term: Heavy construction equipment and building construction Long Term: Vehicular traffic.* Long term noise could be lessened with appropriate requirements for landscaping, such as planting trees that will be big over time.

3) Proposed measures to reduce or control noise impacts:
None, no significant noise impacts are anticipated. That's a positive statement but must be enforced by the builders. RMC – states "Any sound made by the construction, excavation, repair, demolition, destruction, or alteration of any building, property or upon any building site between the hours of 9:00 p.m. and 7:00 a.m. which is audible greater than 50 feet from a residential district." Crews in The Heights At Meadow Springs have started trucks and work before 7 a.m. and the beeping of the trucks backing up is clearly audible more than 50 feet from the work site.

8. Land and Shoreline Use

a. What is the current use of the site and adjacent properties?
Vacant land with no use. This is patently untrue. The land is used extensively by walkers, runners, and equestrians as well as nature lovers and bird watchers. Inappropriate motorized use occurred in the past but has been limited to muscle-powered recreation because of the efforts of the Tapteal Greenway Assoc. and Friends of the Amon Basin.

f. What is the current comprehensive plan designation of the site?
Low Density Residential (0-5 units per acre), Natural Open Space
This is a major flaw in the Comp Plan and led residents to believe the area was protected and would remain in open space. While the efforts of the Tapteal Greenway Association and Friends' of the Amon Basin still have value, they are being dramatically undermined by the City's actions in expanding Claybell and promoting the extension of Center Parkway to Rachel Road.

h. Has any part of the site been classified as an "environmentally sensitive" area? If so, please specify. *No*
Again, the shrub steppe is clearly under threat and losing this habitat means more loss of species. The City is at fault for not protecting at least some healthy shrub steppe- which this is.

l. List proposed measures to ensure the proposal is compatible with existing and projected land uses and plans:
The commercial portion of the site will provide a landscape buffer to provide physical and visual separation when abutting an existing residential zone. The residential portion of the site will meet the comprehensive plan designation of the property by providing a residential unit density less than 5 units per acre.
The City should look at existing codes and requirements to enhance the transition between commercial and residential

and create the Neighborhood Activity Center. Decreasing the existing (and excessive!) parking requirements, requiring sidewalk access to store fronts and bike racks, bike lanes, and a separation between the road and sidewalks would dramatically increase the amount of people walking or cycling to the local businesses. If you travel to any big city – Seattle, Portland, Boise – in the cute, hip, walkable neighborhoods the residences back right up to the commercial building. SEE ATTACHED images.

9.Housing

c. List proposed measures to reduce or control housing impacts: *The applicant will pay all impact fees associated with the development.*
This is really not a true statement. They may pay for road, sewer, etc. They may put cash in the park fund. But because we don't have assessments for schools, this is not true. The cost of development is a net loss to a community – property taxes on residential development do not cover the cost of additional infrastructure.

l. List proposed measures to ensure the proposal is compatible with existing and projected land uses and plans:

The commercial portion of the site will provide a landscape buffer to provide physical and visual separation when abutting an existing residential zone. The residential portion of the site will meet the comprehensive plan designation of the property by providing a residential unit density less than 5 units per acre.

SEE PHOTOGRAPHS AT THE END – Neighborhood activity centers and mixed use districts should be designed to make foot traffic the norm, not the exception. Buffers shouldn't creat the need to drive to the stores/restaurants/offices in the district. Appropriate building, lighting, and landscape design should minimize the need for visual separations.

10. Aesthetics

b. What views in the immediate vicinity would be altered or obstructed? *None.*
Not true! My view and the views of every home on Tiger Lane, parts of Willowbrook, etc. Instead of darkness and stars I will see houses and light pollution.

c. Proposed measures to reduce or control aesthetic impacts: *None> no aesthetic impacts are anticipated.* See above. This is the City's problem. How can street lighting be designed to have minimal impact? How immediate is immediate? I am at least 75 yards across the BPA easement from H@MS and a streetlight glares directly into my master bedroom. Low lighting and streetlights that shine DOWN, not OUT are preferred. The Richland side of Steptoe appears overly bright, the Kennewick side seems reasonable.

Another aesthetic issue is that of trees and planting requirements. Many "new" neighborhoods are nearly devoid of any trees or shade. This is not only unattractive, but it creates a heat island effect. (See Examples at end of document)

11. Light and Glare

a. What type of light or glare will the proposal produce? *The project would provide street lighting to comply with the City of Richland requirements.* As a community that touts a scientific leaning, we should subscribe to lighting design as encouraged by the International Dark Sky Association (http://www.darksky.org/). Most of south Richland is lit up way beyond any need for safety.

b. Could light or glare from the finished project be a safety hazard or interfere with views? *Not anticipated. Measures can be taken to reduce off-site glare.* But will they? I encourage the developer to visit the International Dark Sky Association (http://www.darksky.org/) and be proactive in protecting our views to the best of your ability.

c. What existing off-site sources of light or glare may affect your proposal? *None known.*
Traffic lights on Steptoe & Clearwater are pretty obnoxious – but perhaps this tract will be down behind the RR tracks and those won't be visible. There is a security light on the rear of Columbia Grain and Feed that might annoy some

future residents!

When the commercial portion goes in, lighting on buildings MUST be designed to light DOWN and *not* OUT –the lights on Starbucks/Blockbuster at Gage & Keen are a perfect example of glare. All of Keene is over lit. I cannot imagine trying to enjoy my backyard in the evening if I abutted Keene from Cherry-or Applewood Estates.

d. Proposed measures to reduce or control light and glare impacts: *The project will have a comprehensive lighting placement plan consistent with the City of Richland standards.* See Above Comments

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity? *Claybell Community Park borders the north property line of the site.* Easements from within the tract – especially the NW corner of the tract – between houses – should be included to discourage people from feeling they must drive their kids to the park. The shortest distance is best.

b. Would the project displace any existing recreational uses? *No.* YES! The land is used extensively by walkers, runners, and equestrians as well as nature lovers and bird watchers. Inappropriate motorized use occurred in the past but has been limited to muscle-powered recreation because of the efforts of the Tapteal Greenway Assoc. and Friends of the Amon Basin.

c. Proposed measures to reduce or control impacts on recreation, including recreational opportunities to be provided by the project or applicant: *Sidewalks and paths will be installed to create directional pedestrian control and improved recreational exercise opportunities, offering an all- weather, universally accessible surface to enter and exit the site and to connect with the area's sidewalk system.* This sounds good, but the easements should be in the plat plan or I fear the developers will get a little greedy. Meadows East & Hills West are two examples of neighborhoods that do have trails that cut from cul de sacs out to the main streets or to Steptoe in the case of Meadows East. However Kennewick Park does not have an easement. Were a family whose home backed up to Steptoe wish to go to Dairy Queen (at Steptoe & Gage) they'd have to travel about a half mile out of the way (unless they had a back gate which none have after the city built the brick sound wall.)

14. Transportation

a. Identify the public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any. *Bellerive Road and Meadows Drive enter the site from the north and Center Parkway enters the site from the east. These streets connect to the existing street systems and are public right-of-way.*

b. Is the site currently served by public transit? If not, what is the approximate distance to the nearest transit stop? No *The closest public transit stop appears to be approximately 1 mile east of the project site at the intersection of N. Center Parkway and W. Deschutes Avenue.* When the commercial phase goes through, the City should work with BFT to anticipate the need for bus service.

c. How many parking spaces would the completed project have? How many would the project eliminate? *No parking spaces will be eliminated. Each single family home will have approximately 4 parking spaces (2 driveway and 2 garage). It is unknown at this time how many parking spaces will be provided for the commercial portion of the site.* SEE ABOVE – the City needs to cut down on parking requirements encourage safe access to store fronts and require bike racks to make it easy for people to walk or the Neighborhood Activity Center idea won't come to fruition. The parking lots along Gage, Lee, Wellsian, and up at Queensgate are never full (with the few exceptions of Atomic Brew Pub & Mandarin House, and during the farmers' market at the Parkway.) Remember, about 70% of downtown Richland is asphalt, let's make sure that is not true of new developments.

d. Will the proposal require new roads or streets, or improvements to existing roads or streets, not including driveways? If so, please describe and indicate whether it's public or private. *The proposed internal streets are classified as Local Streets and there are two Arterial Collector roadways that will be constructed to City of Richland Standards. These*

streets will be public.

f. How many vehicular trips per day would be generated by the completed project? Indicate when peak traffic volumes would occur. *Approximately 4,403 average daily trips for the residential portion. Peak volumes will occur approximately between 7:00AM to 9:00AM and s:oo PM to 6:ooPM.*
It is not currently known how many vehicular trips that will be generated by the commercial portion of the development.
See above comments about ensuring the new commercial area is walkable and meets real density that would work as a Neighborhood Activity Center.

g. Proposed measures to reduce or control transportation impacts:
Proposed roadways will be constructed to City of Richland standards.

15. Public Services

a. Would the project result in an increased need for public services (e.g., fire protection, police protection, health care, schools, other)? If so, please describe. *No, the project currently falls within the urban growth boundary. Existing services are adequate to serve this project.*
This is not true and a major flaw in the whole municipal and school planning process. Despite the fact that the Richland School District just approved a new elementary in S. Richland, this development and others in this end of town almost guarantee our schools will be over capacity before they are finished.

b. Proposed measures to reduce or control direct impacts on public services:
Impact Fees will be paid as required. It is time for the community to assess impact fees for schools if the City is stupid enough to keep increasing our south end population. The Dallas Rd. development is horrible enough – this exacerbates that problem!

D. SEPA Supplemental sheet for non-project actions

2. How would the proposal be likely to affect plants, animals, fish, or marine life?
The development of this property will involve the removal of small patches of grass and sage brush, however, there is little to no impact on animals and no impact on fish and marine life.
When the development makes 300,000 cubic yards of cut and 300,000 cubic yards of fill – all that land is moved and creatures die. The city and developers should tell the truth. If we don't value the animals, fine. But don't lie and say they aren't there.

Animals cannot pick up and move somewhere else.

Their burrows are destroyed, they're either buried alive or retreat into someone else's territory (where they will fight each other or starve for lack of food) or they'll get killed on the road. The coyotes may be able to move, but their food supply will be greatly diminished. They too risk becoming road kill. Last fall when the city destroyed the habitat to expand Claybell I saw a confused pheasant walking up the middle of Bellerive. It was really sad.

3. How would the proposal be likely to deplete energy or natural resources?
Development of the property will result in the consumption of electricity.
There is no discussion about what the source of water for landscaping will be. Are they assuming they will get an irrigation right from KID? If they water with city water (treated water) that is an additional expense to the community to pump and treat that water from the river or wells. Further the addition of more water during summer could create drainage problems that affect property along the golf course.

Proposed measures to protect or conserve energy and natural resources are:
The property will be developed in compliance with all applicable building and energy codes.
If Hayden Homes wants to be a good neighbor it could plant street trees and work with the city to develop a gray water landscaping irrigation system. In neighborhoods where the front landscaping is included – and included street trees or front yard trees – the trees grow and provide shade and aesthetic value.

Hayden should also implement green building techniques such as using light colored roofing, and minimizing hardscaping.

4. How would the proposal use or affect environmentally sensitive areas or those designated (or eligible or under study) for governmental protection; such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?
There are no known sensitive areas on the subject property.

The City should have indicated this area as shrub steppe and it should have value as a sensitive area. Because it was never farmed, the habitat was reasonably intact. Many species use the area.

While these ideas are just that, and Hayden has no responsibility other than to follow existing regulations, it's time for the City to update its codes and become a leader in sustainable design and development. Include requirements for gray water for landscaping irrigation. Require tree plantings in new tracts to reduce the need for air conditioning and limit the heat island effect. Lastly the City should outlaw black roofing, again to minimize heat island effect.

Appendix for Hayden Homes – "Beer Falls" SEPA checklist

Hayden is only required to do what the City of Richland has in it's zoning and building requirements. The SEPA Checklist is highly flawed. But even if it were properly prepared, the proposed tract deserves a Determination of Significance because so much habitat will be lost.

However, I recognize that staff and some elected and appointed officials in the City of Richland prefer to kowtow to developers. So I assume Hayden Homes will eventually get your plan approved.

As such, I am a resident who will be very negatively affected by the proposed tract. I encourage, indeed I implore, Hayden to go above and beyond what is required and build a low lit, well shaded community leaving some shrub steppe intact.

The next page shows green arrows where you should include easements to the surrounding area. You mention trails, but if not put into the plan, I doubt you'll keep them there.

The next two pages show neighborhoods that generally don't have trees. PLEASE include street trees at the beginning, whether required or not.

The last three slides are for the commercial phase and future consideration. Push back on the City's parking standards and create a cool mixed use commercial district and Neighborhood Activity Center we can actually enjoy living near! The current model is really lame! Hayden could change that.

Preliminary Plat For:

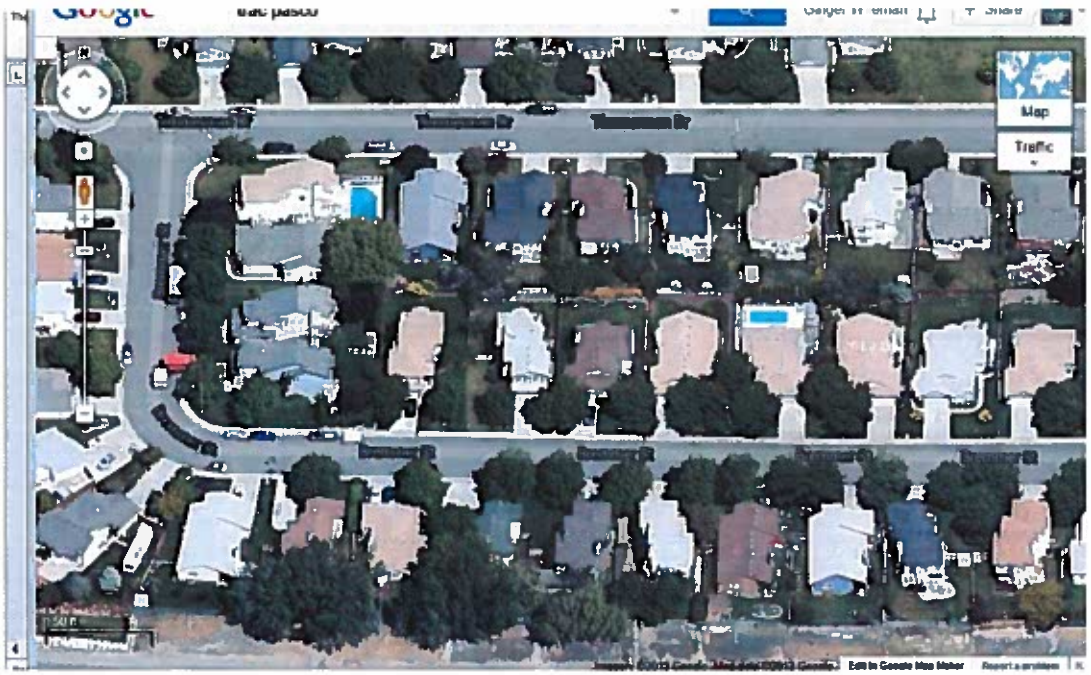
Beer Falls

A Site Located In Richland, Washington

Sagewood Meadows, homes built between mid-80's-2000. Trees starting to really take shape! Abundant street trees.

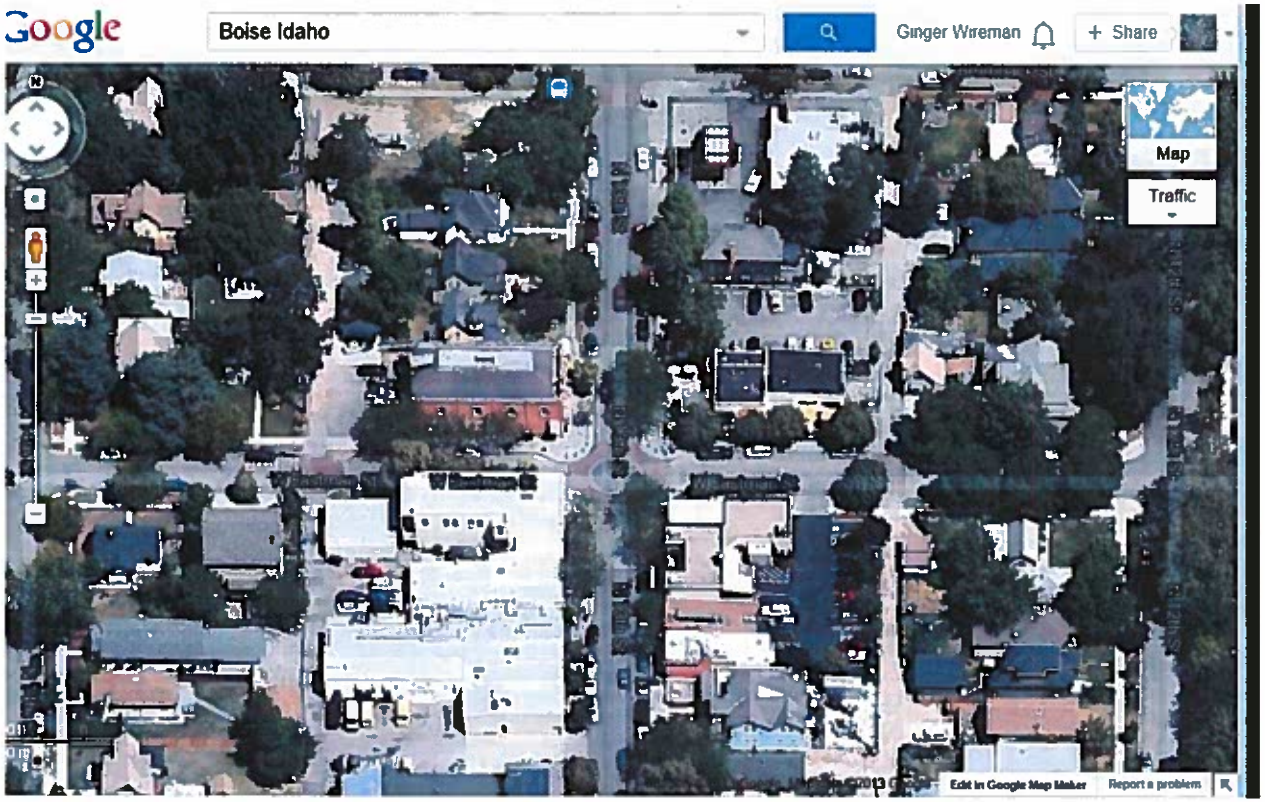
Venus Circle, homes built between 2000-2007. No real trees, no street trees.

Bellerive Springs - homes built between 2000-2010. No real trees, no street trees. (Canyon has trees.)



Impressions - homes built between 1994-2000. Many trees. Front landscaping included with homes. Majority of front yard trees still in place.

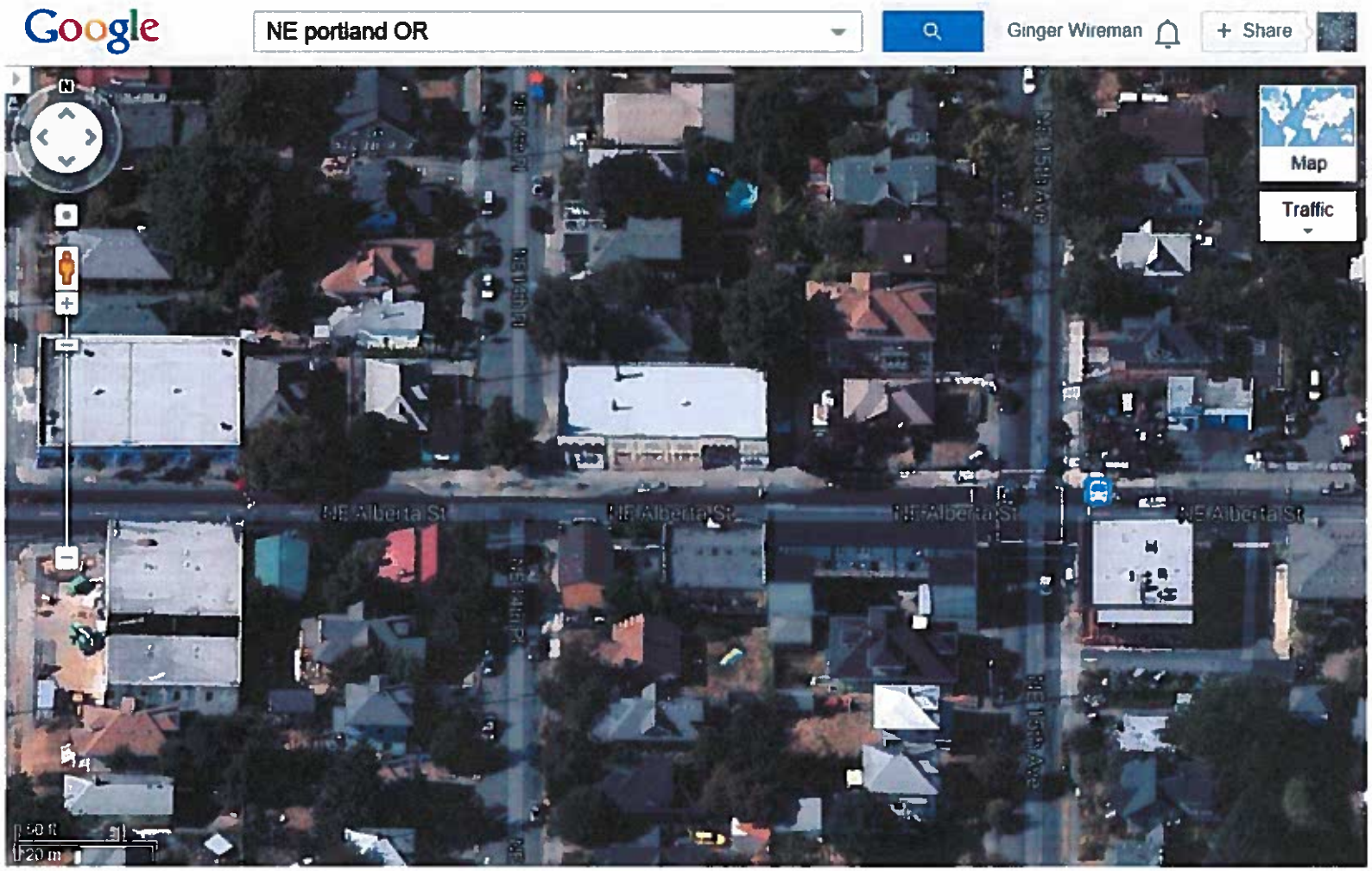
Applewood Estates- HOA formet in 2002. Very few trees – only a handful of residents have planted significant (shade) trees.



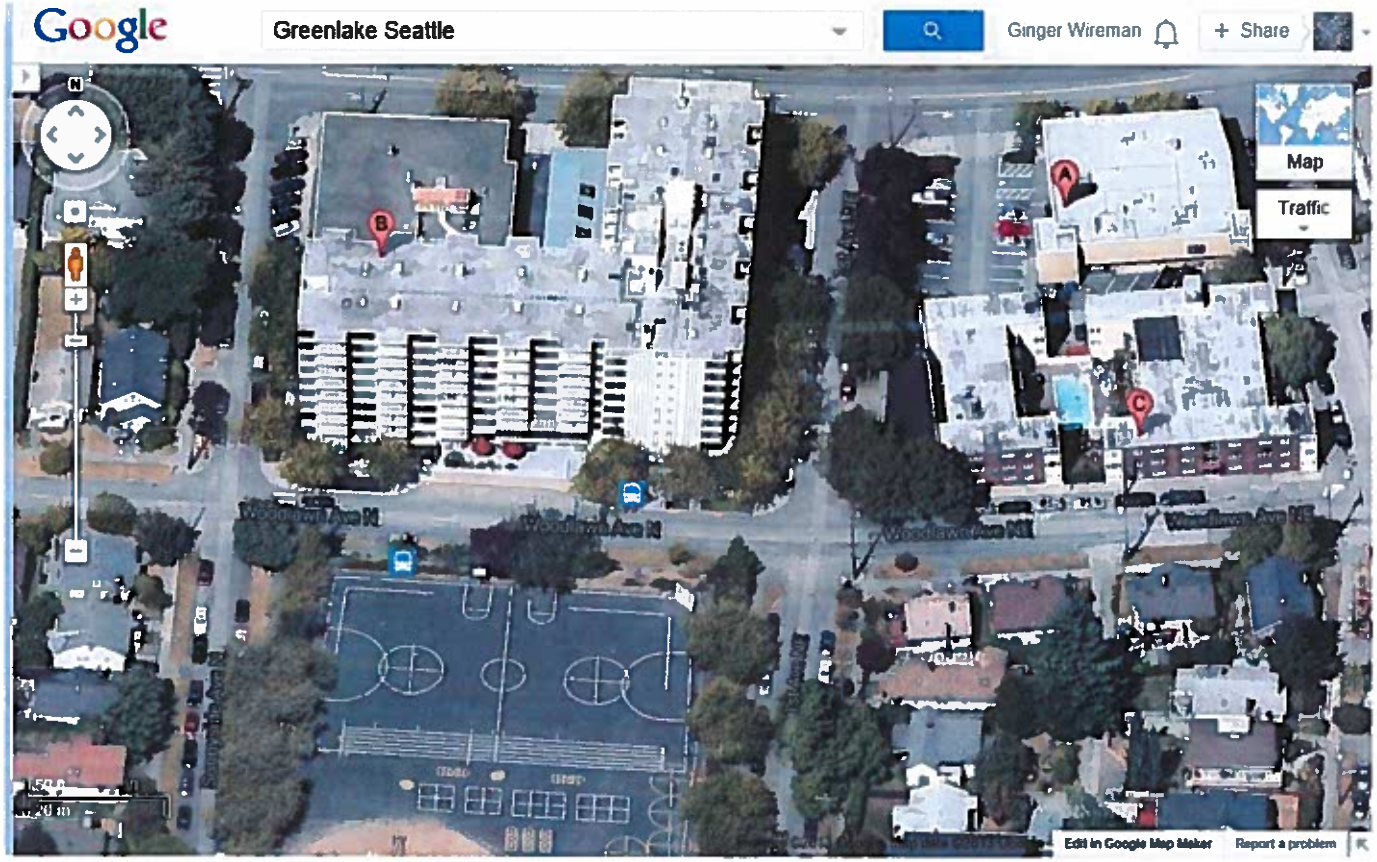
Mini mart and business corridor at 13th and Eastman St. north of downtown Boise.

A visit to this neighborhood and you'll see nearly everyone walks or uses bikes to get places – even with small kids.

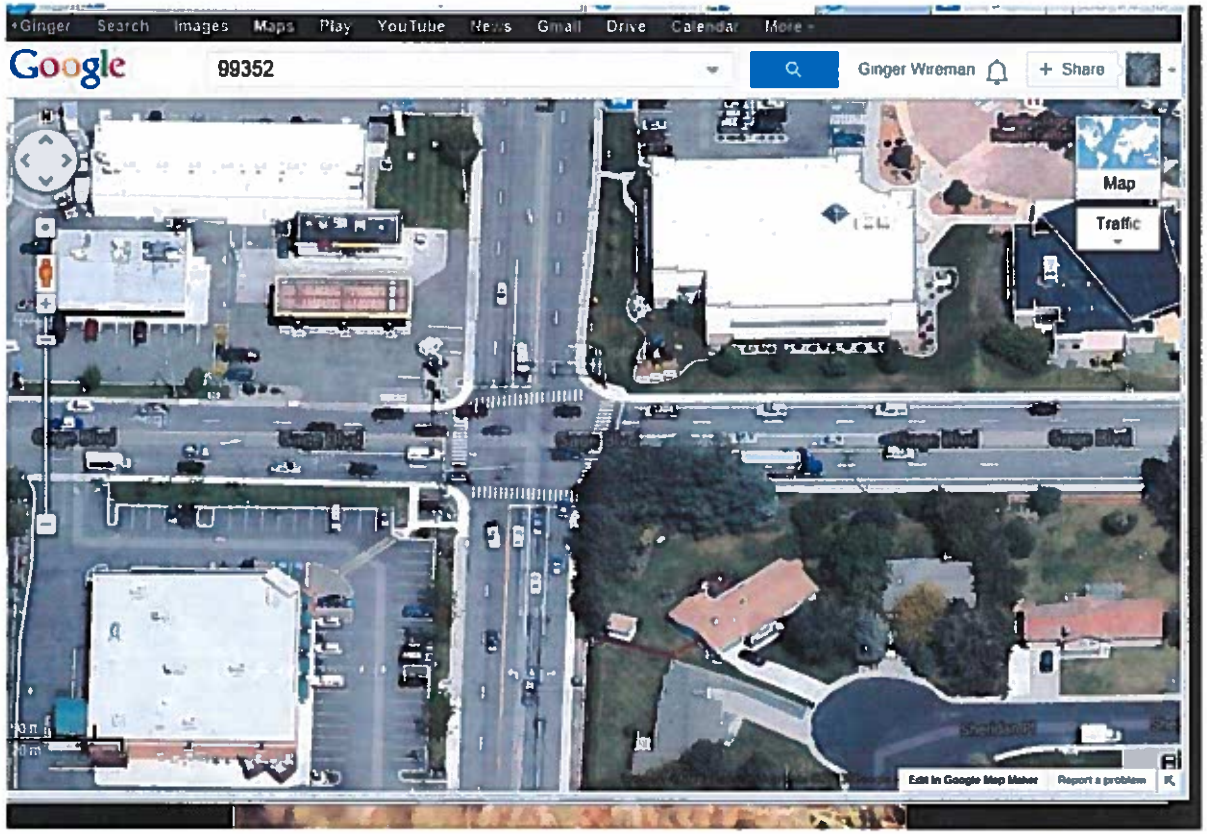
Note lack of asphalt



Alberta St. NE Portland – note commercial structures abutting residential Neighborhoods. Old residences also converted to restaurants, offices. Note lack of asphalt.



Example of mixed use, backed right up to residences in the Greenlake neighborhood of Seattle. Note lack of asphalt.



Leslie & Gage intersection – what could be a neighborhood activity center.

Note expanses of asphalt.

March 18, 2014

KENNEWICK IRRIGATION DISTRICT

Rick Simon
Planning and Development Services Manager
City of Richland
P.O. Box 190
Richland, WA 99352

Subject: Review Comments for MDNS File No. EA04-14, Clearwater Creek/Beer Falls Project

Dear Mr. Simon:

This letter provides Kennewick Irrigation District (KID) review comments on Mitigated Determination of Non-Significance (MDNS) File No. EA04-14, Clearwater Creek/Beer Falls Project. The location of the proposal is west of Steptoe Avenue, south of Claybell Park, north of the Burlington Northern Railroad right-of-way, and east of the East Badger Drain in Section 1, Township 8 North, Range 28 East of the Willamette Meridian, and includes the following parcels:

- 1-0188-100-0001-000
- 1-0188-200-0001-002

The property identified is located within the KID boundaries, but is classified as non-irrigable land. KID provides the following comments on the MDNS issued by the City of Richland on March 4, 2014:

- #5 – No stormwater discharge shall enter the Amon Wasteway without a permit from KID/United States Bureau of Reclamation (USBR), and any stormwater infiltration infrastructure located within the Amon Wasteway right-of-way must be permitted by KID/USBR. The KID/USBR does not issue permits for any non-agricultural stormwater discharges into its facilities unless appropriate Clean Water Act / National Pollutant Discharge Elimination System (NPDES) permitting requirements and other relevant considerations are met (see Reclamation Manual ENV 06-01).

- #5 & #14 - The wetland areas in the Amon Basin, otherwise known as the West Fork of Amon or East Badger Drain, are non-jurisdictional under state law due to their intentional creation as conveyance for irrigation runoff, seepage, and return flows. They are exempt from designation as critical areas under the definitions set forth under RCW 36.70A.30, and no buffer should be required.

- #6 – The erosion control plan for work within the Amon Wasteway right-of-way must be reviewed and approved by KID/USBR prior to any ground disturbing activity occurring within the right-of-way.

12 W. Kennewick Ave., Kennewick, WA 99336, (509) 586-9111, fax (509) 586-7663, www.kid.org

- #15 – The portions of the site that are adjacent to the Amon Wasteway right-of-way shall be fenced in order to prevent access to the right-of-way, unless otherwise directed by KID. In addition, signage approved by KID/USBR must be posted at designated points that state that water levels within the man-made wasteway are subject to rapid fluctuations due to KID operations.

- #17 – The landscaping plan for areas within the Amon Wasteway right-of-way must be reviewed and approved by KID/USBR prior to construction. Generally, KID/USBR does not permit landscaping within irrigation right-of-ways.

- #18 – The pedestrian trail plan that locates trails within the Amon Wasteway right-of-way must be reviewed and approved by KID/USBR prior to construction. Generally, KID/USBR does not permit pedestrian trails within irrigation right-of-ways.

- #20 – The land underlying the Amon Wasteway right-of-way shall be excluded from placement within a conservation easement.

- #21 – The Conditions, Covenants, and Restrictions (CCRs) drafted for the maintenance and construction of trails and open space areas within the Amon Wasteway right-of-way, if permitted by KID/USBR, must be reviewed and approved by KID/USBR.

- #22 – Access and trespass within the Amon Wasteway right-of-way is prohibited without permission from KID; this includes disturbance to vegetation.

- #28 – No construction activity shall be permitted on-site within the Amon Wasteway right-of-way until federal and KID permits have been obtained. Maintenance and operation of the wasteway is exempt from state wetlands jurisdiction statutes and rules (see RCW 36.70A.030, RCW 90.58.030, and WAC 173-201A.020).

If you have any questions regarding these comments, please contact me at the address/phone number listed below.

Sincerely,

Seth Defoe
Planning Manager

cc: File
Nathan Machiela, Hayden Homes, Inc.

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
15 W Yakima Ave, Ste 200 • Yakima, WA 98902-3452 • (509) 575-2490

March 20, 2014

Rick Simon
City of Richland
P.O. Box 190
Richland, WA 99352

Re: EA04-14

Dear Mr. Simon:

Thank you for the opportunity to comment on the mitigated determination of nonsignificance for the Clearwater Creek development of 389 residential lots, a natural open space with trail, and an elementary school. We have reviewed the environmental checklist and have the following comments.

SHORELANDS/ENVIRONMENTAL ASSISTANCE

Site map 6, which shows phase 16, appears to locate the 6-foot pedestrian trail/path within 10 to 15 feet of the Amon Wasteway waters. Other maps also show pathway curves which appear to bring the pathway in very close proximity of the waterway, and within currently vegetated areas. The MDNS Mitigation measure 14 allows the pedestrian trail to be located within the buffer area without specific conditions. What little riparian vegetation exists along this waterway should be kept intact as much as possible, as it assists with pollutant filtration and provides cover for birds, amphibians and small mammals. Pathways should be kept outside of buffers, if at all possible, with limited intrusions into the buffer area to allow viewing of the waterway. This is often done by placing the pathway just outside of buffer or vegetated zones, and creating perpendicular spurs into the buffer zone from the pathway. This kind of path design minimizes vegetation removal and preserves more habitat. Ecology recommends that the pathway location as currently shown on the maps be modified to achieve as little vegetation removal and as much buffer preservation as possible.

If you have any questions or would like to respond to these Shorelands/Environmental Assistance comments, please contact **Catherine Reed** at (509) 575-2616.

WATER QUALITY

Project with Potential to Discharge Off-Site
The NPDES Construction Stormwater General Permit from the Washington State Department of Ecology is required if there is a potential for stormwater discharge from a construction site with disturbed ground. This permit requires that the SEPA checklist fully disclose anticipated activities including building, road construction and utility placements. Obtaining a permit is a minimum of a 38 day process and may take up to 60 days if the original SEPA does not disclose all proposed activities.

The permit requires that Stormwater Pollution Prevention Plan (Erosion Sediment Control Plan) is prepared and implemented for all permitted construction sites. These control measures must be able to prevent soil from being carried into surface water (this includes storm drains) by stormwater runoff. Permit coverage and erosion control measures must be in place prior to any clearing, grading or construction.

More information on the stormwater program may be found on Ecology's stormwater website at: http://www.ecy.wa.gov/programs/wq/stormwater/construction/. Please submit an application or contact **Ray Latham** at the Department of Ecology, (509) 575-2807, with questions about this permit.

Sincerely,

Gwen Clear

Gwen Clear
Environmental Review Coordinator
Central Regional Office
(509) 575-2012

2776

State of Washington
Department of Fish and Wildlife
Pasco District Office, Habitat Program
2620 North Commercial Avenue, Pasco, WA 99301
Phone: (509) 543- 3319, E-mail, Michael.Ritter@dfw.wa.gov

MWR-01-13

March 20, 2014

Rick Simon
Development Services Manager
City of Richland
840 Northgate Drive
Richland, WA 99352

SUBJECT: City of Richland Mitigated Determination of Non-Significance (MDNS) File # EA04-14.

Dear Mr. Simon,

The Washington Department of Fish and Wildlife (WDFW) has reviewed the MDNS and offers the following comments.

WDFW supports the action of placing the open spaces (400' wide irrigation easement / Amon Wasteway) identified in the proposed project into a conservation easement. Further, we support the development and implementation of a landscape plan within this area to protect existing vegetation and fish and wildlife, and provide opportunity for additional wildlife habitat through future restoration.

We would appreciate clarification on what activities and actions will, or will not be allowed within the conservation easement so we can better understand how existing wildlife habitat and aquatic resources in the East Fork Amon Wasteway/watercourse will be protected or impacted. Item 12 of the MDNS states that construction work within the conservation easement can occur with Kennewick Irrigation District authorization, and MDNS item 22 identifies specific areas (road crossing and trails) within the conservation easement where construction may occur. From these items it is unclear if construction work is limited to designated areas or may occur throughout the conservation easement. It's unclear if any restoration or mitigation would be required for any work within the easement.

We would like to reiterate WDFW's position that the Amon Wasteway/watercourse, including the East Fork are "waters of the state", and that Hydraulic Project Approval will be required for work that affects the bed or flow, including any proposed water crossing structures. We have historically required Hydraulic Project Approvals for work in the Amon Wasteway/watercourse.

We have consistently asserted that this is an "altered natural watercourse". We do not dispute that the hydrology of this watershed has been altered by operational spill and irrigation return water. However, direct or indirect supplementation of the hydrology of a watercourse, or altering its name, does not change its status as a "water of the state". There is a natural hydrology element to this watercourse and it has a sizeable watershed. The definition of "waters of the state" makes no reference to hydrology; but that there is a "defined bed and bank" within the watercourse (RCW 77.55.011). We maintain that this watercourse can be mutually managed for the public interests of fish and wildlife protection as well as serving to convey operational spill from irrigation systems and that these functions are not mutually exclusive.

We appreciate the opportunity to provide these comments. Please contact me at 509-543-3319 or at Michael.Ritter@dfw.wa.gov if you have any questions.

Sincerely,

Michael Ritter

Michael Ritter
Area Habitat Biologist

cc:

Michael Livingston, Region 3 Director, WDFW
Perry Harvester, Region 3, Habitat Program Manager, WDFW

Comments Received on Clearwater Creek MDNS

March 20, 2014

1. Alexandra Annette – 1939 Marshall Ave.
2. Karen Sowers – 227 Sitka Court
3. Sandy Trine – 525 Blue Street
4. John McCoy
5. Viviana Gervasio
6. Jim Crosslin – 2638 Willowbrook Ave
7. Robert Wegeng – 2603 Harris Ave
8. Kathy Dechter – 111 Bebb Court
9. Nadine Haglin – 294 Piper Street
10. Charles A. Lo Presti – 1626 Davison Ave.
11. Kathy Dechter – 113 Bebb Court
12. Janet Davis
13. Russel Wyer
14. Kim Cutsforth – 258 Scouler Court
15. Donna Lucas
16. Loren & Teri Sharp
17. Carol Coker
18. Therese Howe
19. Nckummer
20. Jennifer McCann – 621 Reed Street, Kennewick
21. Jonas Childers

March 19, 2014

22. Craig Cameron
23. Brad Evans – 3605 Bermuda Rd., Kennewick
24. Perry & Debbie Roper – 2644 Willowbrook Ave.
25. Bobbie Bull – 1928 Meadow Drive North
26. Ed Rykiel
27. Paula Clark – 3116 W. Metaline Pl, Kennewick
28. Hayley Mann – 1003 S. Young St., Kennewick
29. Chuck Wojnowski – 223 Lasiandra Court
30. David R. Orcutt – 2632 Eastwood Ave.
31. Gail Olson

March 18, 2014

32. Frank Black – 2416 Mickelson Court
33. Jon Hayter – 217 Center Boulevard
34. Samuel Dechter – Willowbrook

35. Robert L. Benedetti – 400 Broadmoor
36. Dr. Jerome C. Birnbaum – 109 Center Boulevard
37. Haggerty's
38. Dorothea O. Ferris-Narum
39. Tom McClelland
40. Shirley Lucas – Columbia Point Dr. D2014
41. Maureen Hamilton – 1909 Peachtree Lane
42. Launa Morasch
43. Leslie Hatcher
44. Lauren Caslin – 8720 W. Falls Ave., Kennewick
45. Mark Mansperger – 2009 Torbett St.
46. Jerry White

February 23, 2014

47. George V. Last

February 14, 2014

48. Launa Morash – 324 Piper Street
49. George Last/Paul LaRivere

To: Rick Simon, Development Service Manager, City of Richland, 840 Northgate Dr., Richland, WA 99352
From: Alexandra Amonette, 1939 Marshall Ave., Richland, WA 99354
CC: Mayor, Members of the City Council, City of Richland, WA 99352
Re: Hayden Homes proposed development, Rachel Road extension, and Claybell Park expansion
Date: March 20, 2014

In August 25, 2013, I responded to the Hayden Homes Development – SEPA Environmental Checklist – Clearwater Creek/Beer Falls in which I identified ten false and incomplete responses and answers by the applicant (Hayden Homes LLC) to the checklist questions. I oppose the development plans of Hayden Homes and the extension of Rachel Road through the Amon Creek Basin Preserve for all of the reasons stated in my previous letter. In addition, no one has assessed the potential groundwater impact of the expansion of Claybell Park nor the development of the homes. Flooding of basements is now occurring and will continue to be a problem. The impacts to the homes along Broodmoor has not been taken into account.

The City consistently ignores the community's interests in maintaining the Amon Creek Nature Preserve as open space, which the community and the Tapteal Greenway Association, Friends of Amon, Springrise, neighborhood school children, Boy Scouts, Eagle Scouts, Girl Scouts, and many other community organizations and individuals have worked so hard to enhance, preserve and study for so long.

There is no need for the Rachel Road extension to connect Leslie Road to Steptoe. There is a need for the City to elevate Columbia Park Trail, between the roundabout at the base of Steptoe west of the train track bridge and Leslie Road in order to prevent the deaths of the wildlife that try to cross from Amon Creek over the road to the river. The other day, a baby beaver was killed.

Our ability to perceive quality in nature dies with each new road, each new development, each obliteration of a wetland, marsh, sage brush, native plant, and wildlife habitat. The City will bequeath this legacy: our children and their children will know nothing of the life in Amon Nature Preserve, because it does not care to preserve it.

The ultimate value in this area is its wildness and solitude. If you persist in the development of the housing and the road, this place become one more episode in the funeral of the native flora and fauna, which in turn will become one more episode in the funeral of the floras and faunas of the world. "We grieve only for what we know," said Aldo Leopold.

Please! Take a stand for this open space! Preserve Amon Basin! Let children come here to study nature! Let the community continue to walk along the existing trails, some with their dogs, some with their kids and grandkids, some, just alone, to enjoy the scent of the sage, the beauty of the phlox and rabbitbrush, the thrill of seeing the beavers and of hearing the larks. To just appreciate the nature that is here.

Thank you.
Alexandra Amonette
Alexandra Amonette

March 20, 2014

Rick Simon, Development Services Manager
City of Richland
840 Northgate Drive
Box 190
Richland WA 99352

Dear Mr. Simon:

This letter is in response to two recent actions by the City of Richland in regards to the proposed Clearwater Creek development by Hayden Homes – the Mitigated Determination of Non-Significance (MDNS), and the extension of Rachel Road through Amon Creek Natural Preserve. With all of the goals and policies in place within the City's Municipal Code, Strategic Leadership Plan and Comprehensive plan, how do either of the aforementioned actions truly make sense? I strongly disagree with both actions.

After reading through all of the documentation available to the public via the City's website, supplemented with information from the Tapteal Greenway website, I question the MDNS for the following reasons:

- There is nothing in the SEPA or the MDNS addressing runoff from homeowner irrigation and runoff that will contain fertilizer, herbicides and other landscape management chemicals. Of particular concern are any lots that will be adjacent to Amon Creek Natural Preserve (ACNP), and thus more prone to potential runoff to the Preserve during storm events, or excessive irrigation.

- Nothing in the MDNS addresses the impact on, or mitigation for, native fauna in the ACNP. The fact that the biological assessment took place over the course of one outing to the area speaks volumes to why the biologist "did not observe" most of the species commonly observed in the ACNP. A quality assessment needs to take place over the course of a year, not a few hours!

- Given the location of the proposed development, i.e. adjacent to the ACNP that is valued by MANY citizens in this region of Washington state, the City should require the developer to install energy reduction and conservation measures throughout the development area, and make sure all residents adhere to those measures.

The City's insistence on extending Rachel Road across the ACNP is appalling, particularly given that Hayden Homes was actually working on alternative routes to reduce the environmental and ecological impact. The lack of foresight and consideration by the City of Richland as to the impact on flora, fauna, geology, hydrology and the future of the wetland and shrub-steppe area is unbelievable.

I sincerely hope that the City of Richland Planning Commission and City Council reconsider both the MDNS and the extension of Rachel Road directly through the ACNP. Please keep the promises made to the citizens, and thoroughly examine what is at stake with the decisions made.

Sincerely,

Karen Sowers
227 Sitka Ct.
Richland, WA 99352

Simon, Rick

From: Sandra Trine and/or Mario Moreno <mrmslt@gmail.com>
Sent: Thursday, March 20, 2014 4:56 PM
To: Simon, Rick
Cc: Rose, David; Lemley, Phillip; Jones, Gregory
Subject: Amon Creek Natural Preserve

The purpose for this email is to comment on the Mitigated Determination of Non-Significance (MDNS) for the Hayden Homes proposed development of Clearwater Creek (Beer Falls). After reading this document I see very few non-emotional arguments to be made. One thing I disagree with is the statement that there are jack rabbits in the preserve, but other species are set off to the side with a remark that seems to indicate they may or may not exist. I walk in the preserve two times a week and many other species of animals inhabit the area.

I am not a 'not in my back yard' commenter. I live in north Richland and come to the basin to walk and enjoy the open natural space. The city has goals and policies that appear to value open space, but Richland has very few open spaces left and none are like Amon basin. I grew up in southern California and know what it is like to lose everything to development. It is nearly always recognized too late. I wish Richland could be different, but as I write this I feel tears coming for what is about to be lost.

As for the plan to extend Rachel Road over the Amon Creek Natural Preserve, I can not believe it would even be considered. It is disgusting to think of doing it when there are alternatives. Richland is losing much without even trying to find a better way.

Thanks for taking comments.

Sandy Trine
525 Blue Street
Richland, WA 99354

Simon, Rick

From: John and Cindy <johnandcid@gmail.com>
Sent: Thursday, March 20, 2014 4:53 PM
To: Simon, Rick
Subject: Rachel Extension through ANCP

Rick,

The success of the Badger Mtn open space acquisition and management should clearly demonstrate the value and importance of open space to the community. The protection of space and wet lands related to Amon Creek should be paramount for the Tri-Cities. We will always have the opportunity for additional development but only one opportunity to preserve open space.

The decision to move forward with a more impactful route of Rachel Road is very disappointing. I look at these decisions in the long term. No one in 50 years will be glad we didn't protect this space, while if we do, residents will be praising the vision of planners that did everything they could to maintain open space amid large tracts of development.

The open space and environment protection can be major elements of the quality of life in our community. Let's have foresight on our decisions of today. I strongly encourage the city to reconsider their decision on the route for Rachel Road.

Very Respectfully,

John McCoy

Simon, Rick

From: vgervasio@libero.it
Sent: Thursday, March 20, 2014 4:50 PM
To: Simon, Rick
Cc: sraugei@gmail.com
Subject: Amon Basin Natural Preserve

Dear Mr Simon,

I came from the beautiful and green Tuscany. When I first moved to Richland 4 years I felt in love with the Amon Basin Natural Preserve. Its beauty is very different from what I was used to, but it is nonetheless breathtaking. Is there a similar place in South Richland were I could freely and safely walk with my children and watch the desert wildlife?
I am used to the river parks, there is a big river in Florence too (Italy), but I never saw before hares or dragon-like lizards as the one I can see in the Amon Basin Preserve. Coyotes and beavers are far from the usual Italian fauna too!
Please, leave us the freedom to enjoy this beautiful area!
My kids love it, my daughter loves to visit the ex-badger den hoping that one day she will see a badger living in it again, my husband rides its bike along the creek and I love to walk and feel safe without having to commute too far from home.
It will break my heart to see this beautiful area transformed as a typical ugly suburban area.

Thank you for taking into account my thoughts.
Viviana Gervasio

Simon, Rick

From: Jim Crosslin <voncross2638@gmail.com>
Sent: Thursday, March 20, 2014 4:45 PM
To: Simon, Rick
Subject: Proposed Rachel Road extension

I oppose the proposed extension of Rachel Road through the Amon Creek Natural Preserve, as part of the proposed Hayden Homes development. The proposed residential development is adjacent to Claybell Park and thus has ready access to Belrive and Gage Boulevard, providing access to the Columbia Center Drive region. Jim Crosslin. 2638 Willowbrook Ave.

Simon, Rick

From: Robert Wegeng <robert.wegeng@gmail.com>
Sent: Thursday, March 20, 2014 4:34 PM
To: Simon, Rick
Subject: Comments

March 20, 2014

Dear Mr. Rick Simon,
Development Service Manager,
City of Richland

As a resident of a Richland, I am writing this email in opposition to the right-of-way for the extension of Rachel Road through the Amon Creek Natural Preserve.

I support the alternate route, as proposed by Tapteal Greenway and Hayden Homes.

Sincerely,

Robert S Wegeng
2603 Harris Ave
Richland, WA. 99352

Simon, Rick

From:	Kathy Dechter <kdechter@charter.net>
Sent:	Thursday, March 20, 2014 4:31 PM
To:	Planning Commission
Subject:	Comments on DMNS sent earlier
Attachments:	Destruction 2010- Amon Sewer-30' contractual-70 ft actual PC170011-1.JPG; Willow gash-Amon sewer line 2010.JPG

March 20, 2014

Dear Mr. Simon:

As a Willowbrook resident, voter, and taxpayer for 21 years, here are my comments on the 3-4-2014 Determination of Mitigated Non-Significance for the Clearwater Creek/Hayden Homes Development.

First, I note that the City of Richland "has determined, that as

conditioned, [the construction] does **not** have a **probable significant adverse impact** on the environment" (all **boldface** mine). I am curious exactly what that means, and how you will measure it. Just a few lines later, the justification for the DMNS repeats four times that you expect "Unavoidable Adverse Impact." Is this not contradictory?

I am especially worried about how much the construction of the Hayden Homes Clearwater Creek development will disturb the Amon Creek Natural Preserve. Ch. 4, Sensitive Areas (4.5.6) states that while the goal is to "avoid environmental impact," nevertheless such activity "**will** result in increased risk of impact on wetlands and habitat, increased erosion and sedimentation…." I can only conclude that this means the risk of collateral damage to the Preserve is high.

I am also concerned about Condition #13: Plans for Sewer Line extension near the wetlands in adjacent Amon Basin "shall identify **adequate** provisions for erosion control during construction…and shall include revegetation plans for disturbed areas…. Revegetation plans shall be comprised of native plant materials …prepared by a wetland biologist….Said plans shall include provisions for **temporary** irrigation until plants become established and shall include provisions for monitoring revegetation efforts over time to ensure that plant materials become established." Yes, there was an attempt to revegetate in the Amon Sewer line project of 2010, but with only minimal effort and follow-through to replant and water the area. To succeed, such an effort must last not just one season in our desert climate, but several. The proof lies in what I loosely term the Amon sewer "restored" area. Take a walk on the road there: it's a cheatgrass and Russian thistle farm.

And the bulldozers have not yet begun to roll. I am still outraged and traumatized by the City contractor's total lack of concern and regard for the wetlands and shrub steppe when constructing the Amon Sewer line in 2010. The contractor was to maintain a 30-foot wide swath: he tore up 70 feet and continued to do so even when warned. The City Engineer/Project Manager said he could not be present constantly at the Amon sewer construction site to monitor, as he was "too busy" with other projects. So the devastation at Amon continued. The Amon Sewer scar will never heal. See attached photos.

Then there is Condition 22: "disturbance to natural open space area shall be **minimized** to the **greatest degree possible** (how do you quantify that?)… to preserve the largest amount of native vegetation and wildlife habitat. Natural open space areas shall be marked in the field prior to…construction. Areas designed for road crossings or trail construction shall be exempt...from this requirement." So will the road crossings resemble the devastation of 2010? What will be done to prevent wholesale destruction?

Finally, there are chilling implications in a letter dated 2-10-2014 sent to the city by George Last and Paul LaRivere. These scientists present their concerns about the geological, geotechnical, and biological aspects of the earlier reports provided by Hayden Homes. They urge a more robust and complete subsurface investigation to fully assess the issue of the " 'perched aquifer' and downhill drainage." They call for "Richland to **require** the geotechnical report that PBS recommends." Further, they note that "the Amon Creek Natural Preserve is downhill from…the Clearwater Creek Development and **inline** to receive the increased drainage rate due to impervious surfaces versus the deep soil complex that exists there now." I shudder to think what that portends for the Amon Creek Natural Preserve.

Mr. Last and Mr. LaRivere also point out that the Phase 1 and 2 Land Use Agreements "obligate the city and the developer to ensure that every effort has been made to protect and preserve Amon Creek Natural Preserve including, but not limited to, the subsurface testing required by code." Will you require such subsurface testing?

So does the DMNS align with Richland's codes, goals, and policies—in short, its promises to us, its citizens? Though I think it's certainly possible that adhering to performance standards based on the Strategic Leadership Plan, the Comprehensive Plan and the municipal codes **could** create a compatible, safe, and livable neighborhood in Amon Basin, after reviewing this DMNS, I am skeptical.

Please reconsider your determination and ask for a more robust and thorough investigation, especially of the subsurface. Amon Creek Natural Preserve (and all of us who care deeply about and have worked so hard to save it) deserves at least that much.

Respectfully,

Kathy Dechter

113 Bebb Court

Richland WA 99352

Kdechter@charter.net

Attachments: Destruction 2010 Amon Sewer

Willow gash Amon sewer line

Simon, Rick

From: Nadine Haglin <nadinemariee@gmail.com>
Sent: Thursday, March 20, 2014 4:27 PM
To: Simon, Rick; Rose, David; Kent, Sandra; Anderson, Brad; Christensen, Terry; Lemley, Phillip; Thompson, Bob; Jones, Gregory; Lambert, Aaron; Planning Commission
Subject: Re the Hayden Homes Clearwater Creek/Beer Falls proposed development

To: R. Simon, Development Service Manager; Members, Richland City Council; Members, Richland Planning Commission

Thank you for the time and effort you've already expended to consider the impact of the Beer Falls proposal on the Amon Creek Nature Preserve (ACNP). Many citizens have been vocal about the value and importance of the ACNP. Through careful consideration, planning and cooperation, the city must balance growth with maintaining healthy watersheds, native habitats and this open space that benefits human communities/ economies as well as the wildlife that lives there.

While it appears that the residential and commercial development of the area will be moving forward, please consider omitting the right of way for the extension of Rachel Road through the Amon Creek Natural Preserve. This roadway would permanently damage the creek and the ecosystem adjoining it in order to simply shorten a drive to Columbia Center by a few minutes. There should be no question that the minor inconvenience of a longer drive is a small price that residents of Richland would be happy to pay for the sake of preserving a local natural treasure.

Tapteal has been advocating for years that the city consider an alternate route that has less impact on ACNP, is more cost effective and still accomplishes the goal of Leslie to Steptoe connectivity. Hayden Homes expressed support for this concept and offered to redesign their plat to accommodate a revised, less impacting route for Center Parkway/Rachel Road.

It's now time for the City of Richland to reconsider the value of the Rachel Road extension in light of its impact on ACNP. Please, for the sake of the people living here and for future generations, protect this beautiful area.

Respectfully,
Nadine Haglin, Concerned Resident
294 Piper Street
Richland, WA 99352

(509)374-4913

1626 Davison Ave.
Richland, Washington 99354
March 20, 2014

Mr. Rick Simon
Development Services Manager
City of Richland
P.O. Box 190
975 George Washington Way
Richland, WA 99352

CC: City of Richland Planning Commission

Dear Mr. Simon:

I was among those who wrote the City of Richland in August, 2013 regarding the proposed Beer Falls development (also known as Coldwater Creek?). I was pleased that the City took the citizens' concerns to heart and required that the developer, Hayden Homes, do more "homework" with regard to these issues and concerns. The result was that a new plan which addresses some of these concerns was proposed and now is under consideration by the City of Richland Planning Commission.

My own concerns related to groundwater, stormwater and erosion potential. Since last summer, Hayden Homes submitted to the City documents including the PBS Geological Hazards Assessment, the Great Northern Geotechnical Site Investigation/Geological Hazards Assessment & Critical Areas Report and the PBS Biological Resources Report. These documents were reviewed by geological and hydrological experts whom I know personally on a professional basis, and I was pleased that these documents were getting the expert attention that they deserve. These experts responded with a document known to me as "Expert Response to geological-geotechnical-biological reports Mar 12-PDF.pdf" by Mr. George Last and Mr. Paul LaRivere, dated February 10, 2014. Mr. Last is a Senior Research Scientist with the Pacific Northwest National Laboratory, specializing in hydrogeology. I expect his opinions are his own and not opinions of the PNNL.

Some of the main points of this report are:

- Residents of Richland have a right to know about risks to their property, such potential for flooding and for cracked foundations.

- City ordinance RMC 22.10.310 B.3.a-m require that geotechnical/geohydrologic conditions be thoroughly assessed prior to development

- The PBS report discusses the potential for increased water infiltration due to irrigation and stormwater run-off from impervious surfaces such as house foundations, roads and driveways. This would be a drastic change from the current complex deep soils currently in existence there. The Amon Creek Natural Preserve is downhill from the proposed development and inline to receive the increased drainage due to vastly increased impervious surfaces.

- Geohydrological conditions around the proposed Hayden Hills Beer Falls site are such that further explorations and assessments should be conducted. In particular, more needs to be learned about "perched aquifers" and downstream water flow patterns, over a full year's water cycle. As you well know, a perched aquifer is an aquifer lying above the main water table. One of many illustrations of a perched aquifer may be found at

http://www.dwaf.gov.za/Groundwater/Groundwater_Dictionary/index.html?introduction_perched_groundwater.htm.

In short, both Amon Basin and neighboring developments have a significant potential to be adversely affected by the proposed development, and the current state of risk assessment appears inadequate, even after the additional studies performed last year. Mssrs. Last and LaRivere suggest steps the City and/or the developers can do to both monitor and mitigate these conditions, and it is best that their full report be consulted in that regard.

I can best echo Mssrs. Last and LaRivere's comment that the city has a vested value in the Amon Creek Natural Preserve documented in the Amon Creek Phase 1 and 2 Land Use Agreements, in which the City is obligated to preserve the Amon Creek Natural Preserve. Amon Basin is the last real wetlands in the city limits, and as preservation value for many reasons, as has been well documented. In addition, the City has an obligation, which I feel it fully understands, to protect existing developments and buildings from adverse effects from future developments. Without doubt, in the case of Beer Falls, the City appears to be stepping up to its responsibilities and I do hope it continues to do so. Again, I join many other Richland residents in urging that the City establish and implement existing performance and design standards with regard to any development around the Amon Basin wetlands, including Beer Falls. It is really important that the City both enforces and follows its own laws, because the City could become a model city for development and conservation combined.

Please accept my comments and petitions in the spirit of continuously improving the City of Richland.

Yours truly,

Charles A. Lo Presti

Simon, Rick

From: Kathy Dechter <kdechter@charter.net>
Sent: Thursday, March 20, 2014 3:31 PM
To: Simon, Rick
Subject: Comments on Rachel Road Extension

March 20, 2014

Dear Mr. Simon:

I was surprised to learn that the City continues to plan to run the Rachel Road extension through the Amon Basin Natural Preserve even though there may well be viable alternate routes. I understand that Hayden Homes is supportive of the concept of a less impactful route; I urge you to consider this as well.

Before you require a right of way through the heart of Amon Creek Natural Preserve--with all the devastation that implies, I respectfully urge you to study the feasibility of alternate routes that would prove far less destructive to this fragile and highly valued area so many of us have worked so hard and so long to save. One possibility is through the Yellow Gate entrance and up the roadbed past the BPA substation.

Your willingness to look at the options would mean so much to us.

Thank you,

Kathy Dechter

113 Bebb Court

Richland WA 99352

kdechter@charter.net

Simon, Rick

From:	Janet S Davis <janetsdavis@gmail.com>
Sent:	Thursday, March 20, 2014 2:52 PM
To:	Simon, Rick
Cc:	Rose, David; Lemley, Phillip; Anderson, Brad; Christensen, Terry; Jones, Gregory; Kent, Sandra; Thompson, Bob
Subject:	Comments on Clearwater Creek Development MDNS

To Rick Simon
Development Service Manager
City of Richland

cc: Richland City Council Members

Please consider the following comments on the Mitigated Determination of Non-Significance (MDNS) for the Clearwater Creek development by Hayden Homes.

Comment 1: The MDNS states, "The lead agency for this proposal has determined that, as conditioned, it does not have a probable significant adverse impact on the environment." This conclusion is questionable given the "unavoidable adverse impacts" listed in the same report. The adverse impacts are avoidable if the city makes appropriate decisions on where changes in land use and development will occur.

Comment 2: Chapter 4, Land Use Element – Sensitive Areas – This section acknowledges that impacts will occur with the Clearwater Creek development: "...changes in land use and development patterns will result in increased risk of impact on wetlands and habitat, increased erosion and sedimentation, and potential landslide and seismic damage in some developed areas." The City of Richland should do everything it can to prevent adverse impacts on the wetlands and habitat of the Amon Creek Natural Preserve. The Preserve is a unique local treasure that needs to be protected from encroachment and waste water runoff associated with developed areas. There are very few natural springs in the desert, let alone springs associated with diverse ecosystems ranging from shrub-steppe to riparian and wetland, all in close proximity to each other. It is a home to many different species of plants and animals, including 150 species of birds, which is more than are present in some of our national parks. It is also the last high-quality ecosystem for the black-tailed jackrabbit, which is a Species of Concern because its population is dwindling. The fact that the Preserve is within the Richland city limits makes it even more special, because it is easily accessible by residents. It doesn't require active maintenance because it is a natural area and can maintain itself on its own if the City protects it from encroachment and damage resulting from the side effects of development (e.g., waste water runoff that would significantly impact the Preserve). The City should jump at the opportunity to protect the Preserve and advertise the value the Preserve brings to our community in educational opportunities as well as recreational opportunities (including hiking, horseback riding, bicycle riding, bird watching, etc.)

Comment 3: Chapter 4 – Land Use Element – Open Space – This section states that "the City of Richland has developed goals and policies for the protection of open space." The section also states that "no unavoidable adverse impact on open space is expected." This is not true, considering that damage to the open space associated with the Amon Creek Natural Preserve could easily be avoided if the City chooses to protect this open space by limiting development (e.g., allowing either no development or only low density residential housing, and/or restricting the area within which development can occur).

Comment 4: Conformance with Transportation Plans – This section discusses the plan for a Rachel Road extension through the heart of the Amon Creek Natural Preserve. The purpose of the extension would be to provide a connection between Steptoe Street and Leslie Road. I understand there is another more cost effective option that would provide

the connection between Steptoe Street and Leslie Road and would have less of an impact on the Preserve. The City of Richland should be pushing for the alternate route to fulfill their obligation of protecting the Preserve, instead of insisting on the Rachel Road extension which will incur lasting damage to the Preserve. This is especially so since (a) the Planning Commission recommended to the City Council in June of 2013 that Rachel Road be dropped from the Transportation Improvement Plan, and (b) Hayden Homes has expressed support for an alternate route.

I submit these comments with a deep desire to protect the Amon Creek Natural Preserve now and for future generations. Damaging it now may result in the demise of a true natural treasure in our midst – once it's gone, it will be gone forever. Your consideration of these comments would be appreciated.

Sincerely,
Janet Davis

Simon, Rick

From: RUSSEL WYER <rrwyer@msn.com>
Sent: Thursday, March 20, 2014 2:51 PM
To: Simon, Rick
Subject: Rachel Road Extension

Rick Simon

The following comments relate to the proposed Clearwater Creek development and the potential impact of the Rachel Road extension on the Amon Creek Natural Preserve. In general the City of Richland's MDNS was well done and covers multiple areas of concern. Unfortunately it leaves a number of issues to be worked out at a later date, specifically the development of a pedestrian trail plan. The plan is to provide for access to both the Amon Basin Preserve located west of the project and to Claybell Park which is located north of the project.

The MDNS fails to establish criteria for the trail plan and one of the most important criteria would be an unencumbered trail extending from Claybell Park to the most southerly end of the west Amon wetland. The Rachel Road extension would create a barrier such that the most southerly pond area could not be part of a continuous trail system from Claybell Park.

There are two other alternative crossing locations for the street connecting Leslie Road to Steptoe. One is extending Center Street in the Willowbrook development and the other is the gravel road about 800 feet south of Rachel Road. The Center Street alternative would still create a barrier to the trail system and sight-distance would not be good at the intersection of Leslie and Center Street. Using the gravel road would allow an unencumbered trail (about one mile long) from Claybell Park. Sight –distance would not be as good as Rachel Road but some additional grading could be done. There may be other alternative crossing sites.

Since the developer and Tapteal have agreed to look at alternatives to the Rachel Road crossing, it is recommended the City of Richland delay the decision for an immediate right-of-way and work with these two organizations to determine if there is a better alternative. However, if the Rachel Road crossing is agreed upon, there will be a safety hazard caused by hikers crossing Rachel Road in order to get to the pond area. Mitigating measure should be discussed and incorporated into the plan.

Simon, Rick

From: Kim Cutsforth <dfskim@pocketinet.com>
Sent: Thursday, March 20, 2014 1:56 PM
To: Simon, Rick
Subject: Amon Natural Preserve

To Richland City Council Members and Rick Simon, Development Service Manager, City of Richland;

I was very disappointed to read that the City of Richland was issuing a Mitigated Determination of Non-Significance for the Hayden Home proposed development of Clearwater Creek (Beer Falls). I feel that this in NO way aligns with the community promises endorsed in the goals and policies of the City of Richland. *"...the City will not make or permit to be made any use of the Amon Creek Property or any part of it which is inconsistent with the use of the property as a public nature preserve."*

This area of land is home of many species of plants and animals that will be greatly impacted by the plans put forth by Hayden Homes. In particular, the extension of Rachel Road through the Amon Creek Natural Preserve forever altering the creek and ecosystem to shave a couple minutes off of a drive to the mall is beyond irresponsible.

The fact that the current Planning Commission recommended to the City Council that the Rachel Road be dropped from the Transportation Plan really makes me wonder WHY you are ruining a beautiful piece of land forever when there are other options that can be explored, and that the idea of has been agreed to by Hayden Homes and Tapteal Greenway.

PLEASE, reconsider your current path and take the Rachel Road extension through the Amon Creek Natural Preserve off the plan forever.

Sincerely,

Kimberly Cutsforth
258 Scouler Court
Richland, WA 99352
(509) 628-9589

Simon, Rick

From: Donna Lucas <donna_lucas@hotmail.com>
Sent: Thursday, March 20, 2014 12:29 PM
To: Simon, Rick
Subject: No to Rachel Road Extension

Please, no right of way for the extension of Rachel Road through the Amon Creek Natural Preserve. We have so many roads. We have only one Amon Creek Natural Preserve. It's past time to quit dissecting it.

Donna Lucas

Simon, Rick

From: Teresa <ltsharp4@msn.com>
Sent: Thursday, March 20, 2014 12:04 PM
To: Simon, Rick
Subject: Pro development & the ACNP

Dear Sir,

My wife and I are life time Richland residents and have lived in the Willowbrook subdivision overlooking the Amon Creek area for 26 years. We have enjoyed walking in the Amon Creek area immensely and do so several times a week.

We are going on record to say we support the City's proposed Rachel Road extension thru to Steptoe and do not believe it will negatively impact the Amon Creek Natural Preserve. We appreciate the City's respectfulness of private property rights while moving Richland forward in a professional and legal manner.

Although we are not thrilled to have a new subdivision in the wilderness we enjoy - we absolutely, 100% respect the owner's right to build it, and therefore support the City's approval of their final plat.

Sincerely, Loren and Teri Sharp

Simon, Rick

From: Carol Coker <carolcoker@q.com>
Sent: Thursday, March 20, 2014 11:19 AM
To: Simon, Rick
Cc: *CITY COUNCIL
Subject: Rachel Road Extension

I was in the Amon Creek Natural Preserve and the Beer Falls area this Wednesday. After seeing the location of the planned Rachel Road Extension and the alternative route, I believe the alternative would do much less damage to the Preserve. Hayden Homes expressed support for the alternative route. Maintaining natural ecosystems in the Tri-Cities is extremely important, as the native plants and animals are becoming endangered. The Amon Creek Natural Preserve is important to the community as a recreation and learning area for the many folks who want to walk the trails in this natural habitat. People do come from out of town as well to see and photograph birds and the unique and beautiful plants in this natural settings in the Tri-Cities. I know, not just from my own frequent enjoyment of this area, but from my association with local and out-of-town plant and bird enthusiasts that Amon Creek Natural Preserve is vital. Please don't let any more the precious natural habitat be destroyed by cutting a road through the middle of ACNP.

Carol Coker

Simon, Rick

From:	Therese <howetherese@gmail.com>
Sent:	Thursday, March 20, 2014 10:25 AM
To:	Simon, Rick
Cc:	mauicats4@yahoo.com; kdechter@charter.net; woodfish24@gmail.com
Subject:	FW: Saving Amon wetlands: a broken promise

Saving Amon wetlands: a broken promise

The Tapteal Greenway group has been advocating for years that the city of Richland consider an alternate route for a roadway that has less impact on Amon Creek Natural Preserve (ACNP), is more cost effective and still accomplishes their goal of Leslie to Steptoe connectivity. Hayden Homes expressed support for this concept and offered to redesign their plat to accommodate a revised, less impacting route for Center Parkway/Rachel Road.

Despite the concessions by Hayden Homes and Tapteal's consistent defense of ACNP it appears that the City will insist on a right of way dedication as a condition of plat approval that runs through the heart of Amon Creek Natural Preserve

For years, farmers in Eastern Washington have received payments to preserve even marginal wetlands. Yet, in the midst of our desert, we have a real wetland with beavers, frogs, fish and even an occasional coyote. And true to form, the City of Richland wants to put a road through it, even though only a block away, there is already a road and bridge.

In 2008, a report found that more than half of the State's wetland are gone and 2000 acres per year are being destroyed. In 2014, nothing has changed, or perhaps it's worse.

Who needs wetlands? Aside from the fact that this is one of only two in the midst of this Tri-Cities desert; wetlands provide a natural water filter for runoff, replenishes groundwater and yes, a home for fish and frogs.

Part of the problem lies in the fact that currently Code-enforcement officers are trained to assist in wetland development, not assessing the biological ramifications or remediation. Apparently, after the area is developed, the homeowners are responsible for maintaining the wetland and open areas. (Yes, I can picture Hayden Homes and it's HOA being really concerned about maintaining the environment.)

Please contact the City of Richland Development Manager, Rick Simon (rsimon@ci.richland.wa.us), and tell them you want to preserve this oasis in our desert. At the moment it's a wonderful quiet place to walk or run and enjoy the rabbits, ducks and frogs. Let's keep it that way!

Therese

Therese Howe
509-521-0470

Simon, Rick

From: nckummer@gmail.com
Sent: Thursday, March 20, 2014 9:56 AM
To: Simon, Rick
Subject: ACNP/Rachel Rd Extension

Please reconsider your decision to have a Rachel Rd extension go through the Amon Creek Natural Preserve. We live on Rachel Rd and certainly do not believe the few minutes it would save to get to the mall is worth the destruction to this beautiful natural area. Once this happens, it is gone forever. PLEASE to not do this!!

Simon, Rick

From: Jennifer McCann <veganlunchbox@gmail.com>
Sent: Thursday, March 20, 2014 8:30 AM
To: Simon, Rick
Cc: *CITY COUNCIL
Subject: Clearwater Creek development at Amon Basin

To Rick Simon, Development Service Manager, and the Richland City Council:

I am writing you to comment on the impending Clearwater Creek development at Amon Basin. The City of Richland is currently planning a right of way for the extension of Rachel Road through the Amon Creek Natural Preserve. Altering the creek to put in this extension would negatively impact the creek and the adjoining ecosystem. I want to extend my support to Tapteal Greenway Association in advocating for an alternate route that will have less of an impact on Amon Creek Natural Preserve. A different route could be more cost effective while preserving our local natural heritage for future generations to enjoy. From what I understand Hayden Homes has also expressed support and has offered to redesign their plat to accommodate a revised, less impacting route for Center Parkway/Rachel Road. Please take this opportunity to work with everyone involved to find a different route that has less of an impact on one of our community's nature preserves.

Thank you for your attention.

Jennifer McCann
621 N. Reed Street
Kennewick, WA 99336

Simon, Rick

From: Jonas Childers <jonascchilders@gmail.com>
Sent: Thursday, March 20, 2014 7:50 AM
To: Simon, Rick
Subject: Amon Basin

Dear Mr. Rick Simon,
My name is Jonas Childers and I am a Richland resident that lives in the neighborhood Willowbrook. I heard that you were building new homes near the preserve and I thought, "Man, I might get some new friends, this is awesome!" But then I realized that you were building an extension of Rachel road OVER the natural preserve and I said, "NO way! He can't do this!" Then I realized you can do whatever you want...."Lets kill all those beavers together!" No. Not happening. Especially since there is a perfect solution that Hayden Homes already suggested. Move the road down! Then you won't have to knock out any beaver dams and kill any endangered rabbits. You also won't have to live with this thought in the back of your head, "Man, why did I wreck all of those animals' homes?" Also, just to say, how would you like it if your house was destroyed, or how would you like it if you got killed? In conclusion, just move the road.

Sincerely,

Jonas Childers

Simon, Rick

From: craig71@charter.net
Sent: Wednesday, March 19, 2014 8:27 PM
To: Simon, Rick
Subject: Extension of Rachel Road and Development MDNS

Mr. Simon,

Thank you for the opportunity to comment on the Mitigated Determination of Non-Significance (MDNS) for the Hayden Homes development proposal and extension of Rachel Road through the Amon Creek Natural Preserve. I appreciate the mitigation measures described in the document to try to protect the reserve and assure that the development is constructed safely. I do have a few concerns, however.

First, I am concerned about the passage of animals under the extension bridge near Leslie Road. Hopefully, it will be high and open enough to allow safe passage of animals into and out of the unique desert habitat offered by the Preserve. I am also worried about the potential for littering from this extension into the park. Besides littering, wind blown garbage and dust will be definite possibilities as the area is developed. Mitigation of wind blown dust is not applied consistently or effectively in many cases and incidents throughout the greater Tri-Cities area. Although, the wind direction will mostly blow away from the Reserve, it is still a problem for downwind neighbors.

The MDNS says that the housing density is consistent with the greater EIS for the City. However, medium density is not low density as was foreseen by the authors of the EIS. Saying it is consistent doesn't make it so. I believe the sensitive nature of the area warrants the low density housing that was originally envisioned.

I believe any trail head areas coming from the development should have signage paid for by the developer educating the new residents about the Preserve and the fragile nature of the ecological system there.

I recommend that the City be a good steward of the land and not approve the development until the plans for the commercial zoned land are provided in detail. For one thing, if an elementary school is going in someday, one should know what commercial activities are going to be in the area for the safety of the students, teachers and parents traveling to and from.

I would also like to know which office of the Department of Ecology reviewed this MDNS under their SEPA role. I wish to know if they provided comments or a ruling on the adequacy of the use of the SEPA process. That should be provided to me, at the very least in a response to comments that would be available to me.

There are several nice sand features, including old dunes, that I believe will be wiped out by the road extension. If that kind of impact can be minimized, then those features of the Preserve and surrounding area can continue to compliment each other.

Finally, I am not comfortable with the routing of the sewer extension through the Preserve. Problems (leaks) with the sewer system could provide excess nutrients that will adversely affect the aquatic system.

Thanks again for receiving my comments. If you have questions about any of them, please email or call me.

Craig Cameron
Richland resident
509 627-3223.

Simon, Rick

From: evansbdc@charter.net
Sent: Wednesday, March 19, 2014 7:17 PM
To: Simon, Rick
Cc: Evans, Brad
Subject: Objection to Rachel Road impact on Amon Creek

Mr. Simon,

This is to respectfully register my strong objection to the right of way planned for the extension of Rachel Road into the Amon Creek Natural Preserve. A significant effort has been under way to hold the developer of the Clearwater Creek/Beer Falls project accountable to recognize and mitigate impacts on the ACNP; the City's action exacerbates the situation.

The unnecessary escalation of proposed development into the midst of the ACNP demonstrates a stunning lack of regard for the wildlife and environment of this unique area. I request that the City drop this Rachel Road right of way requirement and recognize that construction on this proposed right of way will significantly harm the already at-risk habitat of Amon Creek.

Thank you for your attention.

Brad Evans
3605 S. Bermuda Rd.
Kennewick, WA 99338
509-628-2126

Simon, Rick

From: Debbie Roper <debroper@charter.net>
Sent: Wednesday, March 19, 2014 6:41 PM
To: Simon, Rick
Subject: Rachel RD extension across Amon Creek

Dear Mr Simon,

I greatly enjoy the Amon Basin Reserve and am strongly against the Rachel Rd extension.

Tri-Cities is lacking in these types of area's, do not destroy the few that exist. The wildlife will suffer as will the community members that love peaceful walks in the wilderness.

There are alternatives, please do not add the rachel Rd extension.

Perry & Debbie Roper,
2644 Willowbrook Ave
Rihland

Roberta D. (Bobbie) Bull
1928 Meadows Drive North
Richland, WA 99352
(509) 628-0818

March 18, 2014

Rick Simon, Development Services Manager
City of Richland
840 Northgate Drive; Box 190
Richland, WA 99352

Dear Mr. Simon:
I am writing at this time in response to the Mitigated Determination of Non-Significance (MDNS) for Hayden Homes proposed Clearwater Creek development, which I read soon after it was posted. Because I was just discharged from hospital with significant limitations following major surgery and because the deadline for response is imminent, this will of necessity be short and focus only my major concerns.

A letter to the city from George Last and Paul LaRivere dated February 10, 2014 addresses some of my concerns and does it far better than I can. I expressed many of those concerns in earlier letters sent to you and to city council members in August and September of 2013. In those letters I asked that requirements include adhering to established city, state and federal rules and regulations with respect for minimizing damage to the environment. The 2-10-14 letter above leaves me thinking there remains a significant gap between the MDNS, what's best for the Amon Creek Natural Preserve's (ACNP's) environment and the city's obligation to its citizens.

Of even more urgent concern is the proposed right of way for the extension of Rachel Road through the ACNP. This seems nothing short of insanity to me. The extension as I understand it will cut right through the ACNP. It will utterly destroy what many Richland citizens have spent hours and years trying to build for the enjoyment of the community. There is NO way to mitigate the damage that will result. Such a plan leaves me perplexed about the city's understanding about how much this little gem means to many people who live in Richland. If this is allowed to happen I have to believe that the City of Richland has absolutely no regard for its citizens' wishes or welfare. There have to be much better and less damaging ways to connect the Steptoe and Leslie thorough fares. I urge you to consider less devastating options.

Sincerely,

Bobbie Bull

Simon, Rick

From: ed@rykielconsulting.com
Sent: Wednesday, March 19, 2014 3:34 PM
To: Simon, Rick
Cc: Johnson, Cindy; Schiessl, Joe
Subject: Road crossing Amon Creek Natural Preserve

Dear Mr. Simon,

It has come to my attention that Richland plans to bridge Amon Creek across the Amon Creek Natural Preserve to extend Rachel Road to Steptoe St. This action would cause irreparable ecological harm to the Preserve.

The Preserve is a unique asset to the city, a natural small stream ecosystem in a semi-arid environment. Richland is the only one of the quad cities with this kind of stream feature in an otherwise urban environment.

The Master Plan identifies "... sensitive areas along the Amon Basin ..." as natural open space. The Preserve is most certainly a sensitive area. There is abundant scientific evidence demonstrating that running a road through a natural area, particularly one the size of the Amon Creek Natural Preserve, would result in the loss of biodiversity, increase in wildlife roadkills, environmental degradation of aquatic and terrestrial habitats, and deterioration of the natural preserve experience for users of the area.

I also understand that Hayden Homes has agreed to changes that would avoid this extension relative to their development of the upper part of the watershed. I urge you to adopt an alternative that preserves the high quality of one of Richland's most attractive and sensitive natural areas.

Ed Rykiel, Ph.D.
Senior Ecologist Certification of the Ecological Society of America
My area of specialization is systems ecology. I taught ecosystem ecology and landscape ecology at WSU Tri-Cities.

Reference: 2014-2019 City of Richland: Parks, Trails, Open Space and Facilities Master Plan

Simon, Rick

From: Paula Clark <pclark@owt.com>
Sent: Wednesday, March 19, 2014 4:29 PM
To: Simon, Rick
Subject: MDNS for Rachel Way

Dear Mr. Simon:

I understand that the City of Richland issued a MDNS for the Hayden Homes proposed development of Clearwater Creek without considering alternatives to the Rachel Road crossing of the Amon Creek Natural Preserve. It was our understanding that alternatives would be considered in light of the City of Richland Planning Commission recommendation to drop the Rachel Road crossing. I urge you to take the time to consider all alternatives. I am fond of walking the Amon Creek Natural Preserve and want to see it preserved to the extent possible.

Paula Clark
User of Amon Creek Natural Preserve
3116 W. Metaline Pl,
Kennewick, WA
99336
pclark@owt.com

On March 4, the City of Richland issued a Mitigated Determination of Non-Significance (MDNS) for the Hayden Homes proposed development of Clearwater Creek (Beer Falls).

Simon, Rick

From: Hayley Mann <hayley.mann@gmail.com>
Sent: Wednesday, March 19, 2014 12:18 PM
To: Simon, Rick
Subject: Regarding Clearwater Creek Development at Amon Basin

Dear Mister Simon and Staff:

A little last minute, I suppose, but I wanted to take the chance to voice my concerns about the Clearwater Creek Development Plan at Amon Basin at Rachel Road. While I understand the voiced concerns of those living in the Area of the Amon Basin Nature Preserve, I cannot understand why you would want to build a road through one of Richland's wildlife preservs. While one argument might state "We don't even know where that is", this is only due to ignorance, and poor funding for advertisement on behalf of our meager wildlife preservs. I could only hope to bring my children to these nature preservs.

I also believe that you are not fully appreciating, nor have you done the research regarding, the impact this new road will have on the wildlife. The Tri-Cities is a sprawling populace, couldn't we leave a little to the wildlife. There must be some way we can get the people to appreciate and protect what was found here a few hundred years ago by white settlers.

If you could please find it in your heart to re-think the plans for development of Rachel road, and protect the ACNP, it would be greatly appreciated, and not only by me, but by future generations, and the fragile wildlife eco system of the Shrub Steppe Columbia Basin. Thank you for your time and considerations.

Sincerely,

Hayley Mann

1003 S Young St
Kennewick, WA 99353
509-318-0699

Simon, Rick

From: Chuck Wojnowski <cwojnowski@yahoo.com>
Sent: Wednesday, March 19, 2014 11:33 AM
To: Simon, Rick
Subject: Amon Creek & Hayden Development - URGENT

To Mr. Rick Simon,

I am a resident of Willowbrook in the South Richland area and a concerned citizen of this lovely city. I recognize that development will happen in the City of Richland, but implore the city leadership to maintain as much of the Amon Creek Natural Preserve as possible.

As with any livable city, most residents always comment that what makes a city great is the open space that is preserved. Amon Creek Natural Preserve is the perfect example of what can be a draw for the City of Richland. Responsible development of less dense housing and a generous buffer of land around the preserve will only enhance the desirability of Richland.

The Hayden Homes proposal is much too dense and does not provide enough buffer space between the creek and the homes. I do not begrudge the land owners the chance to make a profit, but the current Beer Falls/Clearwater Creek Home Development Proposal squeezes too many homes into site. A less dense proposal would be healthier for the creek and also maintain higher property values for the new houses and those already surrounding the creek. Less density is a Win-Win solution!

As a voting Richland resident, I trust you to make the intelligent decision that will positively impact future generations who move to this area because of its natural beauty.

Sincerely,
Chuck Wojnowski
223 Lasiandra Ct
Richland, WA 99352
(213) 880-1467

Simon, Rick

From:	David Orcutt <davidrorcutt@frontier.com>
Sent:	Wednesday, March 19, 2014 11:19 AM
To:	Simon, Rick
Subject:	Hayden Homes Plat and the City of Richland's MDNS

March 19, 2014

Mr. Rick Simon, Development Service Manager
City of Richland

Re: Extension of Rachel Road through the Amon Creek Natural Preserve

Dear Mr. Simon:

I am writing to you to express my opposition to the City's current proposal to extend Rachel Road through the Amon Creek Natural Preserve. I do not want any of my taxes spent on such a project.

There exist reasonable and cost effective alternatives to promote Leslie to Steptoe connectivity. Apparently even the developer, Hayden Homes, has offered to redesign its plat to accommodate such an alternative.

The City's published goals include:

"Balance private and public interests in the preservation of identified natural and environmentally sensitive areas." and

"The City will provide services that promote sustainable environmental stewardship; provide a healthy and satisfying work environment for its employees; and minimize its impact on the physical environment of the community."

In my opinion the proposed extension of Rachel Road is absolutely inconsistent with these goals. I strongly urge the City to drop its ill conceived plan to extend Rachel Road through the Amon Creek Natural Preserve.

Sincerely,

David R. Orcutt

2632 Eastwood Avenue, Richland

Phone: 628-0584

Simon, Rick

From: Gail Olson <gailolson55@gmail.com>
Sent: Wednesday, March 19, 2014 10:00 AM
To: Simon, Rick
Cc: *CITY COUNCIL
Subject: Amon Creek Natural Preserve

Dear Rick Simon and City Council members:
I recently moved to the Tri-Cities and have been enjoying the experience of getting to know a new area and all it has to offer. The Tri-Cities, I have discovered, is strikingly unique due to its location near the three converging rivers and the fascinating pre-historic glacial floods, and I have been truly awestruck by the wide diversity of migrating birds this spring. I have never lived within walking distance of a pond where I can see 7 different kinds of ducks at the same time, have 2 close encounters with great horned owls, see a flock of 40 sandhill cranes land in a field, or been able to see an otter within the city limits. Amazing!

I have also been amazed by the flood stories of the Yakima. Looking at this lumbering giant during the summer and fall, floods seemed so improbable. Then I had the opportunity this winter to observe the ice jams along Van Giesen and the extent of the flooding in West Richland and through Chamna Natural Preserve, making many of the trails inaccessible or unsafe. Clearly the small fragments of remaining wetlands are taxed to the extreme already, and are the last hope for natural flood control that remain. Unfortunately, it looks like more development adjacent to the wetlands is planned; developers are being allowed to introduce hundreds of acres of hardscape right next to the Amon Creek Natural Preserve which will exacerbate the flooding issue. The developer does not have a grasp on dynamic hydrology of the area, it is clear. And while I have little doubt that the engineers may be able to design stormwater systems to protect the development and the houses, they are incapable of addressing the adjacent impacts which will be both flooding and the irreparable harm to critical habitat.

I am so disheartened by the sprawl that is allowed by the City of Richland, both near Amon Creek and in Horn Rapids. The ticky tack rows and rows of houses, crammed to a density where native animals cannot survive and no human can thrive. The lack of open space planning contradicts the direction of all modern planning. Aside from the critical habitat arguments, and I trust that others before me have attempted to make these, can't the City Council appreciate that natural areas provide a psychological open space for people, an opportunity for people to connect to what's real, and experience the joy of discovering and observing a real thing, unlike the false sense of discovery and "connectedness" afforded through the internet and other digital/electronic means? Natural areas display the unique qualities of the Tri-Cities natural history, and provide accessible educational opportunities for schools and for families. Dark nights allow people to see the stars.

Allowing a development in this area will ruin it. On many levels. For many reasons.
Sincerely
Gail Olson

Frank P. Black
2416 Mickelson Ct.
Richland, WA 99352
509-727-0837
Frank.P.Black@usdoj.gov
March 19, 2014

Rick Simon, Development Service Manager

Dear Mr. Simon:

My name is Frank Black. I am a Gulf War Veteran and have served the public while working for the state of Washington for the past 15 years. The past 7 of those years have been spent in the Tri-cities. Though I may not be an expert in road construction, I have taken part in expansion projects and worked alongside Washington State DOT during many of these projects on the west side of the state.

I was grateful to be relocated, upon promotion, to the Tri-cities, away from the I-5 corridor and the big city hustle and bustle. Life moves a touch slower here and anyone that grew up in Los Angeles, as I did, will be able to tell you: slower is better.

In the past, I've normally rolled with the changing times and had faith in the city leaders to decide what's best for the city's future. Growth is imminent and I understand that completely. Restructuring is necessary during times of growth, but a point of balance needs to be maintained. In layman's terms: too little isn't enough and too much is too much. Additionally, as we all know, there are many ways to obtain the same result; all options need to be looked at before a final decision should ever be made; irreparable mistakes come with haste.

I ask that you take a very close look at the upcoming expansion projects around and within the Amon Creek Natural Preserve. Placing Claybell Park at the base of the Natural Preserve was an excellent idea and I applaud those involved. I respectfully pose the following questions, however: why put an unnecessary road directly through a "Natural Preserve?" Are there no other options? Is the 2 minute savings in drive time so important that we would even think of spending over a million dollars for it? Is the park going to be so overpopulated that we would sacrifice a Natural Preserve for a secondary egress?

At this point in the game, there is no good reason to put a road through a Natural Preserve, regardless of whether or not it is contained within a transportation improvement plan/budget. "Transportation" is the only thing that would be improved. The funding for the project, destruction of a preserve, and disappointment in the city from its residents is the cost you would be willing to pay to improve transportation.

Respectfully,

Frank Black

Simon, Rick

From: Jon Hayter <sanon1214@juno.com>
Sent: Tuesday, March 18, 2014 10:15 PM
To: Simon, Rick
Cc: Thompson, Bob; Kent, Sandra; Jones, Gregory; Christensen, Terry; Anderson, Brad; Lemley, Phillip; Rose, David
Subject: MDNS for Clearwater Creek/Beer Falls Project

Mr Rick Simon,
Development Service Manager,
City of Richland
840 Northgate Dr., PO Box 190 MS 15
Richland, WA. 99352

Dear Mr. Simon;

I am a Richland resident wishing to submit comments into the record for the Hayden Homes development project being proposed just across the Amon Preserve from our home.
One of the reasons we purchased this home last summer, was because of the "Undeveloped View" from our kitchen window, and back deck.
In principal I'm not one who wishes to deny a property owner the right to develop his property (having previously done so myself), but in studying the proposal maps I am convinced
that the NW corner is much too close to the Amon Basin Nature preserve. The corner is at an elevation similar to the wetland buffer, and is much lower than the rest of the project, thus impacting the surrounding area adversely.
It will be an undesirable change of view, negatively impacting property values for everyone along the south & east side of Center Boulevard. The only way to make the proposal acceptable to us, and prevent this loss of value, would be to insist on a wider buffer strip paralleling the creek and planting a strip of shrubs/bushes/trees etc. to screen the construction and buildings/dwellings/lighting etc. from our view.
Thank you for your attention.

Jon Hayter
217 Center Blvd,
Richland, WA. 99352

Simon, Rick

From: Samuel Dechter <sdechter@charter.net>
Sent: Tuesday, March 18, 2014 8:56 PM
To: Simon, Rick
Subject: Rachel Road and the Amon Creek Natural Preserve

Mr. Simon,

I am encouraging the City of Richland to reconsider its intent to forge ahead with the Rachel Road extension through the Amon Creek Natural Preserve (ACNP) just because it has been in the transportation plan for a number of years. The South Richland area has changed in the past two decades and the residents there desire preservation of the ACNP more than a faster trip to the mall. Many of us have donated substantial amounts of money (and time) to purchase the ACNP in order to retain the open space and wildlife habitat for all to enjoy. Crossing the preserve with a feeder thoroughfare will destroy a significant portion of the ACNP. The preserve was turned over to the City in good faith as an open space within the city. The citizens of South Richland have spoken through these actions and being ignored by our city government is like a slap in the face. I feel that the City should listen to its citizens and amend the transportation plan accordingly to bypass the ACNP and support its preservation. Hayden Homes recognizes this and is willing to alter its plat to do so.

Why not negotiate with the BPA to utilize its access road to cross the wetlands and access the hilltop if it is indeed necessary to shorten the travel time to Steptoe Street? I think that the City has a burden to investigate this option (and there may be others) and justify to its citizens why there is no recourse but to irrevocably damage the ACNP. An altered traffic plan that avoids the ACNP will be viewed as the City supporting its South Richland residents and taxpayers.

Thank you.

Sam Dechter
Willowbrook

To: Rick Simon, Development Service Manager, City of Richland.

Subject: Ground Water Impacts on Broadmoor homes by the: Hayden Homes proposed development; and the City of Richland expansion of Claybell Park.

After 22 years, for the first time four years ago, I found ground water in my basement crawl space. It appeared in September when KID began its major discharge of excess irrigation water to the KID Waste Way at Beer Falls. This was about the time the city upgraded the sewerage pump near the KID Waste Way. I had to install a small sump pump to remove the water. Every year since, this pump goes into action through the months of September and October. Now I fear the City's actions will significantly aggravate this problem

This summer the city Richland will begin watering two new soccer fields and possibly, in the future, just south of those fields, Hayden Homes will be building 389 homes if you approve their Plat.

As far as I can tell no one has assessed the potential ground water impact, of both the park expansion and Hayden Home's plans, on the homes on the north side of Broadmoor.

Let me remind you that a few years ago the city attempted to rebuild a sewage pump station at the far east end of Broadmoor. What happened, you ran into water at a higher level than expected and the project was delayed. At that time the east end of the old soccer field was continuously water soaked.

Then the City tried to update the sewer line running under Broadmoor. What happened? A disaster. You hit water at about twenty feet and could not lay the new pipe until you lowered the water table under the street from KID Waste Way to Amon Creek. What did it take? It took a pumping station every 40 feet on each side of Broadmoor, between the KID Waste Way and Amon Creek, running 24 hours a day for at least four months two draw the water down to 40 feet. To run those pumps you used three diesel generators.

Those pumps discharged 3000 Gallons a minute for four months into KID Waste Way until the new sewer line was laid.

Most of the homes on the south side of Broadmoor have yards that drop at least 10 feet in elevation from Broadmoor to the ends of their backyards. All of us know that underground water runs a few feet below our basements and comes to the surface in Meadow Spring's Golf Course, at the pond on the 16th fairway, just 20 feet beyond the property lines. We also know that Meadow Spring Country Club spent a lot of money raising the 16th fairway level because of the ground water level issues.

For The Record: It is not unreasonable that the City study the Claybell expansion and the potential Hayden Homes development Plat approval for potential impact to homes along Broadmoor.

There are possibly no impact solutions. There is enough ground water that the city could sink wells to water the Claybell soccer fields and the Hayden Homes Project's lawn watering systems.

Robert L. Benedetti

400 Broadmoor, Richland WA 99352

551 4400

drbobintran@charter.net

Simon, Rick

From: brenda.birnbaum@frontier.com
Sent: Tuesday, March 18, 2014 6:55 PM
To: Jones, Gregory; Thompson, Bob; Rose, David; Lemley, Phillip; Christensen, Terry; Anderson, Brad; Kent, Sandra; Simon, Rick
Cc: Jerome Birnbaum
Subject: proposed plat by Hayden Homes and extension of Rachel Road through the Amon Creek Natural Preserve

To Mr. Rick Simon and to the Richland City Councel :

I am writing to express my deepconcern of the proposed development of the Amon Creek Natural Preserve area. I would ask you all to vote this proposal down. The Amon Creek Natural Preserve is indeed a beautiful area within walking distance of several thousand Richland residents. My entire family enjoys hikes through this area on a regular basis. We live on the south side of Center Blvd and witness on a daily basis how widely it is used and enjoyed by hikers throughout the year. Developing this area would have a grave negative effect on all of these people. But much more importantly it would have a devastating effect on all the wonderful plant life and wild life in the area. The construction process alone would virtually destroy the whole area. Possibly it would recover to some extent over many years but before that could happen more develpment surely would occur as precedent is set. In my opinion it would be a disasterous decision. We live in a desert. The Amon Reserve area is one of the very few wetlands we have left. Why should we choose to destroy it? I say let's not make such a decision. There are hundreds of acres of dry desert land suitable for development in the Richland area. I am all in favor of economic growth and progress and would support such development in areas that are not so rare and precious. Please vote from your heart and turn this absurd proposal down.

Thank you very much for the opportunity to express my opinion to you on this most important topic. I would welcome any comments or questions from you.

Best regards,

Dr. Jerome C. Birnbaum
109 Center Blvd
Richland, WA 99352
509-628-9284

Simon, Rick

From: Kevin <hagg757@yahoo.com>
Sent: Tuesday, March 18, 2014 6:36 PM
To: Simon, Rick
Subject: Rachel Road Extension (YES)

We live within the Willowbrook addition and fully support the city of Richland's decision to extend Rachel road to connect with Steptoe road! I only hope the city also finishes extending Piper street to connect with Center Park soon too. So tired of living on a dead end street!

Haggerty's

Simon, Rick

From: Dorothea Narum <dottyofn@gmail.com>
Sent: Tuesday, March 18, 2014 3:01 PM
To: Simon, Rick
Cc: Rose, David; Kent, Sandra; Anderson, Brad; tchristiansen@ci.richland.wa.us; Lemley, Phillip; Thompson, Bob; Jones, Gregory
Subject: Amon Basin

Dear Mr. Simon,

The extension of Rachel Road through the Amon Preserve is simply outrageous. You need to come up with a better plan.

Sincerely,
Dorothea O. Ferris-Narum

Simon, Rick

From: tom mcclelland <tom1952@clearwire.net>
Sent: Tuesday, March 18, 2014 1:21 PM
To: Simon, Rick
Subject: Amon Creek Natural Preserve concerns

Dear Mr. Simon;
As a long time Richland resident and a member of the Tapteal Greenway Association, I have serious concerns about the current stand that Richland is making in regards to the Amon Creek Natural Preserve. Richland government has made promises to both the Tapteal Greenway and the citizens of Richland that the ACNP would be protected for future generations. This has already been compromised by the Beer Falls Development, and, now the city proposes yet a further encroachment to this preserve by reinstating the Rachel Road extension right of way, after their own planners have recommended against such a move. Even Hayden Homes has agreed to redesign their plat to accommodate a revised and less impactful route for the Center/Rachel Road.
Please do NOT support the Rachel Road extension, and help us continue to support the Amon Creek Natural Preserve.
Thank you for your time and consideration,
Sincerely,
Tom McClelland
(509) 967-5088

Simon, Rick

From: Shirley Lucas <whippoorwilly@gmail.com>
Sent: Tuesday, March 18, 2014 11:38 AM
To: Planning Commission

Why would our "representative" government allow the carving up of Amon Basin Preserve?

This jewel, this tiny park, rescued and maintained by Tapteal Greenway, quietly holds its place on the Olympic Wallowa Linement.
Walk there, and sharp eyes will find that both our geological history and today's wildlife are revealed.

It hosts a wealth of wild plants and animals, natural walking paths, ancient springs bubbling up through 1000s of feet of basalt, fragments left of ice age floods, a number of active beaver dams, and more. Yet it is a fragile place.

We should drive around Amon Basin Preserve..not through it.

Richland Citizen,
Shirley Lucas
Columbia Point Dr. D204
Richland, WA 99352
509 420 4683

Simon, Rick

From: Maureen Hamilton <mkhamilt@LIVE.COM>
Sent: Tuesday, March 18, 2014 10:40 AM
To: Simon, Rick
Cc: Rose, David; Lemley, Phillip; Anderson, Brad; Christensen, Terry; Jones, Gregory; Kent, Sandra; Thompson, Bob
Subject: Please reconsider location of Rachel Road

I am a long time resident and homeowner in the south Richland area. Some of the many assets of living here are the natural areas that have been preserved locally and around the Tri-Cities. The Amon Creek Basin Preserve is one of those natural space jewels of the area. This small area of natural vegetation which is home to a variety of birds and animals, including a unique family of beavers that have learned to use the sage brush instead of trees for dam and lodge building, adds much value and joy to living here. This area is now being threatened by the Hayden Homes development and the extension of Rachel Road through the heart of the Amon Preserve. Even as an elevated road, this extension would seriously impact beaver habitat, become a deathtrap for wildlife and destroy connectivity of the two parts of the Preserve.

The Tapteal Greenway organization and local residents have been advocating for years that the city consider an alternate route that has less impact on Amon Basin, is more cost effective and still accomplishes the goal of Leslie to Steptoe connectivity (if an additional connection is really that important). Hayden Homes has expressed support for this concept and offered to redesign their plat to accommodate a revised, less impacting route for Center Parkway/Rachel Road. Unfortunately City officials seem unwilling to consider this alternative. Please reconsider your position. Is shortening the drive from Leslie Road to Steptoe really worth the major damage that would result to this beautiful piece of natural habitat enjoyed by so many of us? I think not. Our rivers, ridges and open spaces need to be protected not damaged or destroyed.

Thank you for your consideration.

Maureen Hamilton
1909 Peachtree Lane

Simon, Rick

From: Launa <lfmorasch@gmail.com>
Sent: Tuesday, March 18, 2014 10:17 AM
To: Planning Commission
Subject: Rachel Road Extension

Dear Planning Commission -
As a resident of south Richland, I want to ask that you reconsider the extension of Rachel Road through the Amon Creek Nature Preserve. It serves no necessary purpose for the Hayden Homes development and can be addressed at a later time. That was the decision of the Richland Planning Commission in 2013. It is sad that the City Administration has now overridden that decision. Please reconsider. We do not need a street that will simply shorten our driving time to commercial areas by a few minutes. We need to preserve a creek that is the largest tributary of the Lower Yakima River in Benton County. It serves as an oasis in our dry climate.

I urge you to take time to consider the impact of extending Rachel Road and consider other options. Once the concrete is poured and Amon Creek has been permanently altered, we cannot reclaim a small, but wonderful, natural treasure.
Launa Morasch

Simon, Rick

From: LESLIE HATCHER <lesliehatcher@icloud.com>
Sent: Tuesday, March 18, 2014 7:08 AM
To: Simon, Rick
Subject: Rachel Rd Extension

March 18, 2014

Dear Mr Simon,
City of Richland

I am concerned with your recent decision regarding the approved extension of Rachel Rd through the Amon Creek Natural Preserve. What on earth are you thinking?

There are so few of these natural wildlife areas left in our region. Can the projected tax revenue ever outweigh the long term impact on our quality of life in the City of Richland? I'm certain it can not.
It is my understanding that even the developer, Hayden Homes, was willing to move the road that will connect Leslie Rd. to Steptoe in order to keep it out of the Natural Preserve. Again, why didn't you accept their offer?
I'm afraid this feels like blatant disregard for the wishes of the residents of Richland as well as the environment.
Mr. Simon can you make me understand what the thinking was in regards to approval of this plat with the proposed Rachel Rd running directly through Amon Basin Preserve?

Respectfully,

Leslie Hatcher
Richland Resident
509-539-7108

Sent from my iPad

Simon, Rick

From: Robert Runkle <georockstar@aol.com>
Sent: Monday, March 17, 2014 11:08 PM
To: Simon, Rick
Subject: Comments regarding MDNS for proposed development of Amon Basin

17 March 2014

Rick Simon

Development Services Manager

City of Richland

Lauren Caslin

8720 W. Falls Ave.

Kennewick, WA 99336

(509) 554-0679

Dear Rick,

Thank you for your service to Richland and the Tri-Cities! I am writing with regard to the Mitigated Determination of Non-significance recently applied to the proposed development of Amon Basin by Hayden Homes. Frankly, I am shocked at the determination that the proposed development does not have, "significant, adverse impact on the environment."

Actually, the proposed development will mostly ELIMINATE the current environment.

I don't think we need geologists, hydrologists, wildlife biologists or any other professional to recognize that what Hayden Homes is proposing will remove the plants that supply the oxygen that we breathe, remove the soil that filters the water that we drink, and drastically affect, if not eliminate, the animals that keep the balance of nature in check.

Please think this over again.

Last week, while I was driving on Clearwater Avenue, a coyote exited Amon Basin and walked in front of my car to the other side of the street. Rick, this coyote (and probably it's spring litter) live in Amon Basin. I've seen it a few times. Can you explain to me what would happen to it, and the jackrabbits that Hayden Homes acknowledges live in the Basin, if construction trucks level the land one day? Where will this coyote go? Where will the jackrabbits go? Across Clearwater? Across Leslie? Across Steptoe? What literally happens to these animals? Are they killed by the dozers, graders, etc? Do they end up in the surrounding neighborhoods? They already make their way into the surrounding neighborhoods as it is now!

I believe that no matter what arguments are made for or against this development, when you, Richland City Council and Hayden Homes lay down at night an inner wisdom will remind you of what is truly important and valuable in this life. As humans, we have created houses, built many roads and sidewalks and made a great deal of money. That's impressive...but not remarkable. Many people, companies and cities do this.

What would be remarkable is if we decided NOT TO...because there was something else more important to do at this time.

I ask that Hayden Homes donate the land they purchased in Amon Basin to a local, Tri-Cities conservation group.

And I ask you, and the City of Richland, to preserve Amon Creek Nature Preserve as intended. Please do not build roads through this preserve. Tri-City residents do not need to get to Columbia Center Boulevard a few minutes faster...it is not necessary. On the other hand, as motorists drive AROUND Amon Basin, may they be told the story of how Richland chose ANOTHER future for this land!! A story to tell many generations...a lesson of deep respect for where we came from, this land, these animals, these plants.

WOW!! I'd love to live in a city like that!!

I believe strongly that this outcome is possible and most likely...or I wouldn't waste my time writing this letter.

Thank you again for your dedicated service to Richland,

Sincerely,

Lauren Caslin

Simon, Rick

From: Mark <mcmanthro@hotmail.com>
Sent: Monday, March 17, 2014 12:50 PM
To: Simon, Rick
Subject: ACNP

Dear Mr. Simon,

The ACNP is a local treasure. Please do all that you can to preserve it in its entirety. Thank you.

Mark

Mark Mansperger
2009 Torbett St.
Richland, WA 99354
(509) 392-8481

Simon, Rick

From: Jerry White <dcr@clearwire.net>
Sent: Thursday, March 13, 2014 10:29 AM
To: Simon, Rick
Subject: Fwd: Clearwater Creek/Beer Falls development

---------- Forwarded message ----------
From: **JERRY WHITE** <dcr@clearwire.net>
Date: Thu, Mar 13, 2014 at 10:05 AM
Subject: Clearwater Creek/Beer Falls development
To: rsimon@cirichland.wa.us

Rick,

I have followed the actions related to the above proposed development and have read the environmental reports provided to and approved by the city.

As in previous efforts it is clear that the developer and the city are more focused on completing a required document than providing the meat that is intended by the legal requirement. This version is better than the first attempt, but is still lacking on real environmental analysis. The document does not describe any potential damage to the Amon waterway during or after construction. Amon waterway is an environmental resource that the City of Richland should protect. We have plenty of areas for development without impacting our environmental resources.

Other than builder profits there is no justification for increasing the density of housing, yet the City seems to rubber stamp whatever developers want without considering impacts. We are not and do not want to be Seattle, our citizens like open spaces. The environmental analysis does not (I don't know if it is done elsewhere) the impacts of the increased traffic on the city's road system. I think of your comments often about Leslie Road not having a traffic problem when I am sitting for several minutes waiting for a chance to dash onto Leslie from High Meadows in the hope I don't create an accident. The heavy density of the proposed development will increase the density of traffic on existing streets. Has the city really looked at this impact!!!.

I am not opposed to new development or city growth, but I strongly feel we should have development that is reasonable and consistent with our lifestyle and the desires of its citizens, not just the desires of developers.

Jerry

Feb. 14, 2014

Dear Editor:

I'm thrilled at the recent editorials commending the Tri-Cities people who are working to keep open spaces in our community. When I saw that the Benton County Commissioners are working to preserve Candy Mountain, I started doing "High Fives!" In addition, now that a consultant is looking at how to define our three communities, it is important to realize the value of the recreational treasures and open space we have, or can establish, and the possibilities that are waiting our endorsement.

Perhaps first we should define what we mean by "open space." It can be areas that are left in a natural state (as much as possible) to enjoy either within our towns or at the edges of our towns. But also developed parks where children may play or people may walk or ride to enjoy the vitality of nature that surrounds us. Open spaces offer breathing room that makes our towns attractive and healthy places for people to live.

In 1990, the State of Washington passed the Washington Growth Management Act. In short, its purpose was to keep cities within cities and forests, or natural lands, within nature. One outgrowth of this act was the Mountain to Sound Greenway from Puget Sound to Ellensburg. Formed in 1991, the trust has worked to protect 1.5 million acres in that central Washington area. Business leaders, civic organizations, and individuals have put their efforts to making sure there is "open space" for generations to come.

I imagine there are business leaders, civic organizations, and individuals of like mind in the Tri-Cities to help us maintain land for public access, recreation, and wildlife habitat in our communities. The three cities are a great place to live, but will be more attractive as a work place if we preserve open space within our towns (i.e., they call them greenways in Seattle). Open space brings together people in all walks of life to protect our environment and create sustainable

communities. Open space helps us protect indigenous plants and riparian areas, it gives wildlife a place to roam, and can, if we are careful, benefit the recovery of species that may have lost habitat.

Open spaces also serve an economic purpose for they attract new businesses looking for a sustainable community with great places for employees to live. I have also read that open space improves local property-tax base. According to John Crompton (professor from Texas A&M University), the "proximate principle" determines that private property gains value in direct proportion to its proximity to protected public lands.

When we look at the ridges south of Badger Mountain trails and see roofs on the ridges, we know that we as a community have lost a vision of what open space can mean. Those ridges west and south of Richland and Kennewick would have been a perfect place to establish a park of trails rather than the current development. Maybe those ridges could have been our Forest Park (think Portland, Oregon)? What vision the people in the early 20th century had to establish Forest Park in Portland and Woodland Park in Seattle! Let's see what vision those of us in the early 21st century have.

We are all stewards of nature and our local shrub-steppe environment. Let's make a concerted effort to protect the natural treasures we have for the enjoyment of everyone in the Tri-Cities. One such area under current consideration by the City of Richland is the Amon Creek Nature Preserve in South Richland.

For those of you unfamiliar with this area, Amon Creek is the largest tributary of the Lower Yakima River in Benton County. To paraphrase Wikipedia, "...It flows about 13 miles and goes through Kennewick and Richland. The West Fork starts in Badger Canyon and slowly wraps around along the topography of the canyon to flow out of it northbound. The creek flows through the semi-arid climate in the rain shadow of the Cascade Mountains. Because of this, the creek serves an important role as an oasis...."

The Amon Creek Nature Preserve has walking trails that are busy in all seasons and every day of the week. Woven among the current neighborhoods, it is a jewel that will give viability and better living areas for generations to come. In addition, there is a wetland along the sides of the creek that provide homes for the wildlife in our area.

This area, however, is threatened by a Hayden Homes development which, I understand, would put a major arterial through the preserve and a concrete culvert would be built over the natural creek. The development would include track housing, strip malls, and commercial stores that would come up against the nature preserve. The Tapteal Greenway Association has told me they would love to buy that land along the Amon Creek Nature Preserve, but do not have the funds.

Perhaps we need a Tri-Cities fund drive to buy the rest of Amon Creek Preserve? Better yet, I would encourage the developer to step up to the plate and donate the land along the Amon Creek Nature Preserve so it can be protected. Certainly Hayden Homes has seen significant profits in the Tri-Cities that they can contribute this area for the betterment of our three communities.

The future of the Amon Creek Nature Preserve is currently in the hands of the Richland City Council. Let's hope they have the vision, just as the Benton County Commissioners, to see what our future could be with open space within our communities. A park, walking tail, bike path, or natural space is a gift we give ourselves and future generations.

Signed,

Launa Morasch
324 Piper Street
Richland, WA 99352
PH 509-396-3878

Simon, Rick

From: George Last <gvlast@charter.net>
Sent: Sunday, February 23, 2014 8:05 AM
To: Simon, Rick
Subject: Re: Clearwater Creek Development Concerns
Attachments: AWP Amon Wasteway.docx

Rick,
I have been doing some research into mammoth sites in our local area, and assembled the following information on a site found near the Beer Falls development area. This is not an isolated occurrence. Bax Barton and I have documented at least 45 mammoth sites in Benton County alone, with another site located in the Meadow Hills area (that tusk was on display at the CREHST Museum).

I do not know if it is useful to you, but it does suggest that the developers should be watchful of paleontological as well as archeological sites in the area.

Please let me know if you need any further information.
George

--
George V. Last, LG, LHG
Geology Research Coordinator
MCBONES Research Center Foundation
(509) 946-8050 (home)
(509) 371-7080 (work)
http://www.mcbones.org

> From: George Last <gvlast@charter.net>
> Date: Mon, 10 Feb 2014 19:42:37 -0800
> To: <rsimon@ci.richland.wa.us>
> Conversation: Clearwater Creek Development Concerns
> Subject: Clearwater Creek Development Concerns
>
> Attached is a short document summarizing our review of the geology,
> geotechnical, geohydrologic, and biological resources reports submitted by
> Hayden Homes. We feel there are a number of recommendations that should be
> acted on to ensure proper understanding of potential risks, and to guide
> design of the project to mitigate those risks.
>
> Please let me know if you have any questions or if I can be of further
> assistance.
>
> Sincerely,
> George V. Last

Paglieri (1980) lists this site as the BR-N Mammoth Site that was explored by the Mid-Columba Archeological Society (MCAS) in 1978. Waitt (1980), citing personal communication with Nick Paglieri, in 1978, indicated that multiple skeletal elements were reported found in a Northern Pacific Rail Road cut near the center of Sec. 1, T.8N, R.28E. Waitt indicated that a tusk and tooth were recovered from the site, but that most of skeleton was destroyed during excavation. He also indicated that the Burke Museum was the repository for these specimens. Waitt described this mammoth find as being in vaguely rhythmic to non-rhythmic Touchet beds of fine sand to silt, with the bone bed located at 3.3 m below a tephra deposit.

AWP Amon Wasteway, 1978 – *Paglieri* [Benton]:

Location (PLSS): Center Sec. 1, T.8N, R.28E (est.)

Coordinates (Lat., Long.): N 46.20631, W 119.25379 (est.)

Elevation (MSL): 560 ft (est)

Taxonomy: mammoth (*M. Sp.*)

Repository/Spec. No.: Burke Museum/No.?

Skeletal Elements: Multiple elements

Geology: Fine-grained Ice Age flood deposits

Age: Quaternary

Previous Documentation: Paglieri (1980); Waitt (1980).

Simon, Rick

From: George Last <gvlast@charter.net>
Sent: Monday, February 10, 2014 7:43 PM
To: Simon, Rick
Subject: Clearwater Creek Development Concerns
Attachments: response to geological-geotechnincal-biological reports 2-10-14 draft 3.doc

Attached is a short document summarizing our review of the geology, geotechnical, geohydrologic, and biological resources reports submitted by Hayden Homes. We feel there are a number of recommendations that should be acted on to ensure proper understanding of potential risks, and to guide design of the project to mitigate those risks.

Please let me know if you have any questions or if I can be of further assistance.

Sincerely,
George V. Last

2-10-14

We would like to address recent Clearwater Creek development documents submitted by Hayden Homes, specifically the PBS Geological Hazards Assessment, the Great Northern Geotechnical Site Investigation/Geological Hazards Assessment & Critical Areas Report and the PBS Biological Resources Report.

The PBS geology report did not adequately address the code RMC 22.10.310 that requires a subsurface investigation. That report does expose a potential liability for the city and the developer in relation to the "perched aquifer" and downhill drainage. The city should request that subsurface testing go beyond the geotechnical report to fully assess that issue. At a minimum those tests should focus on subsurface geohydrologic conditions and predicted impacts relative to the drainage/wastewater/stormwater plans to assure protection of the downhill/downstream assets such as the natural preserve and area neighborhoods. The irrigation monitoring recommendation in the report is improbable to institute and enforce.

City ordinance dictates that studies in 22.10.310 B.3.a-m are required. In particular;

> *c. Conduct subsurface exploration suitable to the site and proposal to assess geotechnical geohydrologic conditions;*

The Amon Creek system is a manifestation of both natural (springs) and anthropological influences (irrigation, street drains, septic systems, irrigation returns) that results in perennial surface flows, wetlands, riparian area, and terrestrial communities. The whole forks area is extremely dynamic regarding groundwater, surface flows, springs, and wetlands. Recently the city became increasingly aware of these dynamics when they attempted to install a new pump station on the downhill drainage side of Amon Basin near Bellerive road. Residents near the project experienced flooding in the streets and their property once the shallow water table was breached. A full scale and prolonged pumping effort was undertaken by the city to prevent further property damage.

The PBS report states clearly that there is a potential for an increase in groundwater infiltration due to development (irrigation and storm water). The report neglects to quantify the degree of increased infiltration in focused areas of irrigation and storm water runoff due to impervious surfaces versus the near uniform low infiltration rates controlled by the deep soil complex and vegetative cover that currently exists. Additional geotechnical geohyrologic tests and predictions must quantify the potential occurrence and consequence of perched water to down gradient neighbors and new residents. Citizens "have the right to know" of any potential risks to their property and wellbeing (such as the potential for their basements to flood, or their foundations to settle unevenly and crack).

Richland should require the geotechnical report that PBS recommends. This work should include a well-designed network of piezometers to detect and monitor groundwater levels (including potential areas of perched water). The piezometers should be monitored for at least one full year to capture seasonal variations, due to precipitation, stormwater, and irrigation changes. Note that GN testing was only conducted for 10 days. It would also benefit the city and the developer to model one hundred year storm and flood events for the area, both pre- and post-development, to quantify potential effects on groundwater and surface water resources and their impacts on surrounding properties.

The PBS Biological Resources Report consistently mirrors the need for downhill protection from the development.

> *The development plans will be revised so that no development occurs within 150 feet of the edge of the wetlands or 100 feet of the riparian community. No stormwater will be discharged within 200 feet of the riparian community. All stormwater from the development will be infiltrated on site. Best management practices will be used during construction to prevent damage to the adjacent Amon Creek Nature Preserve or runoff to any wetlands or protected areas.*
>
> *The WF Amon Creek has very high habitat value because springs provide a constant water source, there is a direct connection downstream to aquatic and wetland habitats at the confluence of the Yakima and Columbia Rivers, and there is a diversity of habitats.*

The city has a vested value in the Amon Creek Natural Preserve documented in the Amon Creek Phase 1 and 2 Land Use Agreements. These agreements are very clear about the preservation responsibility the city is obligated to follow.

The Phase 1 Agreement included the Energy Facility Site Evaluation Council, Washington Department of Transportation and Richland; the Phase 2 Agreement added Tapteal Greenway.

> *During its ownership, the City will not make or permit to be made any use of the Amon Creek Property or any part of it which is inconsistent with the use of the property as a public nature preserve. In particular, the Amon Creek Property shall never be used for residential, commercial or industrial purposes.*

The Amon Creek Natural Preserve is downhill from the proposed Clearwater Creek development and inline to receive the increased drainage rate due to impervious surfaces versus the deep soil complex that exists there now. These agreements obligate the city and the developer to ensure that every effort has been made to protect and preserve Amon Creek Natural Preserve including, but not limited to, the subsurface testing legally required by code.

Concern for the Amon Basin existing neighborhoods and the Amon Creek Preserve, the jurisdictional promises made to the residents of Richland, and the requirements of the Richland Municipal Code should be the guideposts for the design of this project.

George Last

Paul LaRivere

April 8, 2014

KID
KENNEWICK IRRIGATION DISTRICT

Michael Ritter
Area Habitat Biologist
Pasco District Office, Habitat Program
Department of Fish and Wildlife
2620 North Commercial Ave
Pasco, WA 99301

Subject: City of Richland MDNS File EA04-14 Comments

Dear Mr. Ritter:

This letter is in response to your March 20, 2014 letter to the City of Richland commenting on the MDNS issued for the Beer Falls / Clearwater Creek subdivision. The Kennewick Irrigation District (KID) would like to correct some of the erroneous information found in your letter, and to make clear KID's position regarding your suggestion that our drains and wasteways are subject to Hydraulic Project Approval (HPA) permits, and that our seepage, return flows and operational spills are "waters of the state."

Washington Department of Fish and Wildlife (WDFW) has been, contrary to state law, attempting to require HPA permits for maintenance and operations work done in irrigation drains and wasteways. On two separate occasions in 2002, the Sunnyside Valley Irrigation District (SVID) was performing maintenance in the Spring Creek Wasteway, and the WDFW filed a criminal complaint against SVID for not obtaining an HPA to complete this work. At trial, SVID presented evidence to the Benton County District Court that Spring Creek Wasteway was not a natural watercourse, and SVID should not be required to obtain an HPA permit for work done within the wasteway. The court agreed with the facts presented, concluded that artificial drains and wasteways are exempt from the requirements for an HPA, and thus found SVID not guilty.

The SVID case is very similar to the current situation with the Amon Wasteway, where KID has evidence and data that the water in the designed and partially constructed wasteway is virtually all seepage, return flows, and operational spills. KID has the right to operate and maintain the drainage without WDFW interference and without an HPA permit. These waters are not "waters of the state", as you assert. The Amon Wasteway and its tributary drains fall outside of the definition of "waters of the state" that are listed in RCW 90.48.020. While prior KID management may have obtained HPA permits in the past, these instances predated the SVID litigation and were unnecessary under the law.

The Amon Wasteway and its tributary drains (East Badger Drain, Plymouth Drain, AP Lateral Drain, West Extension Drain, and Leslie Drain) are designed and (in some cases) partially constructed features installed along natural low points and dry washes to convey seepage,

12 W. Kennewick Ave., Kennewick, WA 99336, (509) 586-9111, fax (509) 586-7663, www.kid.org

return flows and operational spill to points of reuse (i.e. the Gage pumps) and out of the District boundaries and back to the Yakima River, from where the waters were originally derived.

WDFW's assertion that the Amon system contains "waters of the state" and is therefore subject to HPA permits rests on the notion that the system has a "natural hydrology" component, and has a large "watershed." This is too broad of a definition for "waters of the state." This would mean every low area in the state over which rain-on-snow runoff or thunderstorm events occur would be "waters of the state." As you are aware, gullies and dry canyons in desert environments are formed by fluvial process, usually over a very long period of time. The geologic time frame in which they are formed does not require large amounts of flow or a consistent frequency of flow. By your definition, every dry rill and gully in the state is a "water of the state", since over a geologic time frame sufficient water had flowed to create a "natural hydrology" component. This is obviously too broad, as determined by the Benton County Superior Court in the SVID cases.

Furthermore, the channel that now contains the East Badger Drain and the lower Amon Wasteway is widely believed to be the former channel of the Yakima River, which was diverted thousands of years ago to its present course by one of the Missoula Floods. As you are aware, the Yakima River is allogenic, having its source in areas of higher precipitation on the eastern slopes of the Cascade Mountains. Likewise, the surface water and the spring water found in the East Badger Drain are allogenic, having been derived from water diverted at Prosser Dam from the Yakima River, and pumped into the KID Main Canal at Chandler Pump Station. These waters are not derived from local sources such as precipitation or snowmelt, and do not reflect local climatic or hydrologic conditions. The evidence is that the last time that this drainage had significant, consistent flows prior to irrigation was when the Yakima River flowed through the canyon thousands of years ago.

WDFW's assertion that Amon should be subject to HPA permits based upon watershed size and "natural" hydrology is arbitrary at best and is inconsistent with the SVID cases. While the watershed area for the Spring Creek Wasteway is smaller than the Amon Wasteway watershed (43 square miles versus 62 square miles), it is still a large drainage basin, and actually has a higher maximum elevation of 3,140 feet, compared to 1,942 feet for the Amon watershed. As for the "natural" hydrology component of the watersheds, Spring Creek Wasteway was measured in one year to have 22,944 acre-feet of flow, with 280 acre-feet of that estimated to be natural flow (around 1 percent), and Amon Wasteway was measured to have 23,012 acre-feet of flow, with 390 acre-feet estimated to be natural flow (also around 1 percent). It is clear from the scientific and historical record that there was scant flow in these and other lower Yakima basin tributary drainages prior to the onset of irrigation, and what flow did occur was minimal, episodic, and inconsistent.

Once KID diverts its water from the Yakima River, those waters are no longer "waters of the state." At that point, it is water that KID has the legal right to deliver to its land owners for beneficial use, pursuant to the parameters of our water right and our contract with the United States Bureau of Reclamation (USBR). This is no different than a municipality pumping its water

right out of a river and piping it to customers. The only difference is that KID's water is not piped.

Additionally, KID's contract with the USBR stipulates that "the United States does not abandon or relinquish any of the waste, seepage, or return flow waters attributable to the irrigation of the lands of the project, including lands to which water is supplied under this contract." The Department of Ecology in 1975 concluded that the water found in the Amon Wasteway and its tributaries are Yakima Project irrigation return flows that are subject to recovery and reuse by KID, and thus cannot be claimed or appropriated by others. The ongoing Acquavella adjudication in the Yakima basin has confirmed Ecology's stance. The evidence is overwhelming that the water found in the Amon basin is seepage, return flows, and operational spills that KID is exclusively entitled to recover and reuse.

KID would also like to point out that Amon Wasteway is named as such by the United States Board of Geographic Names because the Amon drainage did not carry enough natural flow to warrant it being called a "creek." The area around lower Amon was surveyed in July of 1871, and all of the drainages were noted as "dry in summer", which was the season that the survey was taking place. The 1917 Pasco quadrangle shows the Amon drainage as terminating at a point just below what is now Columbia Park Trail, with no surface connectivity to the Yakima River. KID is unaware of any evidence that supports your claim that the name of the water course was "altered." Please immediately provide all evidence on which you rely for that assertion. If you cannot produce such evidence, KID respectfully demands that you correct your misstatement to the City of Richland, and cause a notation to be included in all WDFW files that the correct name of the feature has been and always has been "Amon Wasteway." It is unfortunate that there is either an "environmental generational amnesia" being perpetuated regarding Amon or a knowing and intentional effort to misstate or ignore the established facts regarding this historically dry wash. This has caused much confusion and misinformation that KID has exhausted considerable resources attempting to correct through research and education.

KID remains interested in finding collaborative solutions to the management of the resources in the Amon Wasteway and East Badger Drain. However, that will not occur if WDFW personnel continue to assert that Amon is a "creek" subject to the HPA requirement. In order to reach workable and effective management decisions, the baseline information that all interested parties work from must be scientifically, legally, and historically correct.

So, once again, if you have ***any*** science-based or historical information that shows that Amon was anything but a dry wash prior to the onset of irrigation, please pass it along to KID so that we can consider it in our operations and maintenance management and planning.

If you have any questions regarding these comments, please contact me at the address/phone number listed below.

Sincerely,

Seth Defoe
Planning Manager

cc: Rick Simon, City of Richland
Chuck Freeman, KID
Mike Livingston, WDFW
Perry Harvester, WDFW
Brian Iller, Rettig, Osborne, and Forgette
Scott Revell, Yakima Basin Joint Board

Tapteal Greenway

Promoting conservation, education and recreation along the lower Yakima River since 1995

Tapteal Greenway has long worked to protect Amon Basin as a sanctuary for humans and animals alike. In 2006, and again in 2008, we took the initiative to secure funding to purchase 76 acres that now comprise phase one and phase two of the Amon Creek Natural Preserve. In 2009 the Tapteal Greenway fell agonizingly short of securing Phase Three funding that would have completed the vision of a natural Central Park for the region. We have continued to work tirelessly to restore habitats, educate kids from eight to eighty, and create a refuge for wildlife and people in the Amon Basin area.

The Clearwater Creek development will destroy 119 acres of prime shrub steppe habitat and seriously impact the natural open space we have worked so hard to preserve and maintain. We cannot support this development. Nevertheless, Tapteal Greenway has been working closely with Hayden Homes and, to their credit, an agreement has been reached to provide additional natural open space buffers and connectivity for the Amon Creek Natural Preserve.

Tapteal Greenway encourages the planning commission and City Council to ensure the maximum protection allowable under SEPA and the Richland Municipal Code. We ask that your recommendation be in alignment with the community promises endorsed in the goals and policies of the City of Richland. Please maximize preservation of the open space features that the community treasures so much at the Amon Creek Natural Preserve.

Sincerely,

Scott Woodward 4/16/14
President

Simon, Rick

From: Adam Draper <adraper@forterra.org>
Sent: Thursday, April 10, 2014 12:34 PM
To: Simon, Rick
Cc: Jill Scheffer
Subject: Clearwater Creek follow up

Rick – thanks for the notice re: the upcoming Clearwater Creek/Beer Falls hearing. As you know, Forterra holds title to the mineral rights under this entire project area. It is my understanding that the City has requested that Hayden dedicate ROWs and streets for public use, is that correct? It is also my understanding from Richland city code (24.12.080 Final plat – Required certificates and statements) that a certificate must accompany Hayden's final plat which "shall be signed and acknowledged before a notary public by all parties having any ownership interest in the lands subdivided and recorded as part of the final plat."

I want to get on the record and ensure that you know that Hayden Homes has not notified Forterra or sought Forterra's consent/approval at any step of this process thus far, although they are well aware of our ownership interest dating back to last fall. We have tried to maintain open lines of communication and work with them to ensure our interest is respected and taken into account, but as this project quickly moves along I fear this may not happen.

Let me be clear that Forterra is not opposed to this project per se or to development projects in general, indeed, we have worked with some of the biggest developers in the state to achieve mutually desirable outcomes both locally and regionally. However, Forterra has the legal ownership interest in the minerals in, under or which may be produced from Hayden's proposed development area, and we have a duty to ensure our property rights are protected and accounted for as part of the development process. This duty arises both from the fact that 1) our organizational mission and standing in the community depends on our respect for and protection of private property rights, both our own and those of all parties with whom we work and engage; and 2) as a 501(c)(3) nonprofit corporation subject to strict IRS rules, we cannot take action, or in this case simply step aside and allow action to be taken, through which our resources serve to primarily enrich a private entity as opposed to the public.

Our east side Director, Jill Scheffer, and I are planning a trip to Richland for April 23 to coincide with the public hearing. I am sure that day is busy for you, but if possible we would like to meet with you as part of our trip.

Best, Adam

Adam Draper
Staff Attorney
D. 206.905.6956
F. 206.374.6297
adraper@forterra.org

Forterra
Formerly Cascade Land Conservancy
901 Fifth Avenue, Suite 2200
Seattle, Washington 98164
www.forterra.org

File No. EA04-14

CITY OF RICHLAND
Mitigated Determination of Non-Significance

Description of Proposal the development of a 131.9 acre site to include the development of 80.6 acres for single family residential development, comprised of 389 lots; the set aside of 23.2 acres for natural open space that would be improved with a pedestrian trail system; the set aside of an 11.7 acre site for a future public school; and the set aside of 15.5 acres for future, unspecified commercial development. The application will require a Comprehensive Plan Amendment to change the designation of 16.45 acres from Low Density Residential to Commercial. The proposal also involves a change of zone of 16.45 acres from Agricultural (AG) to Neighborhood Retail Business (C-1), a change of zone of 6.92 acres of Single Family Residential (R-1-10) to Medium Density Residential (R-2S), a change of zone of 19.01 acres from Agricultural (AG) to Natural Open Space (NOS), and a change of zone of 89.59 acres of Agricultural (AG) to Medium Density Residential (R-2S). For the residential portion of the site a preliminary plat application has been submitted for a 389 detached single family lot subdivision. Within the residential portion of the project, an 11.75 acre site has been reserved as an elementary school site.

Proponent Hayden Homes

Location of Proposal West of Steptoe Avenue, South of Claybell Park, North of the Burlington Northern Railroad right-of-way; East of the Amon Basin Preserve I in Section 1, Township 8 North, Range 28 E.W.M.

Phased Review: The residential portions of the proposal are well defined; however; the applicants have not identified with any specificity the type or nature of commercial development that is proposed for the 16.45 acres located on the eastern portion of the site. For this reason, the City is able only to evaluate the impacts of the proposed residential, school and open space areas which comprise the westerly 115.45 acres of the proposed project. Additional environmental review will be required at the time the applicant submits information concerning the nature of the commercial development proposed for the 16.45 acres in the easterly portion of the site. Traffic studies or other additional information may be required at that time. No action will be taken by the City on the proposed comprehensive plan amendment involving the easterly 16.45 acres of the project site until the additional environmental information for this portion of the site is completed.

Lead Agency City of Richland

The lead agency for this proposal has determined that, as conditioned, it does not have a probable significant adverse impact on the environment. (A copy of the required conditions is attached.) An environmental impact statement (EIS) is not required under

RCW 43.21C.030(2)(c). This decision was made after review of a completed environmental checklist and other information on file with the lead agency. This information is available to the public on request.

( ) There is no comment for the DNS.

(**XX**) This MDNS is issued under WAC 197-11-340(2); the lead agency will not act on this proposal for 14 days from the date below. Comments must be submitted by **March 20, 2014**.

( ) This DNS is issued after using the optional DNS process in WAC 197-11-355. There is no further comment period on the DNS.

Responsible Official Rick Simon

Position/Title Planning and Development Services Manager

Address P.O. Box 190, Richland, WA 99352

Date March 4, 2014 **Signature**_____

COMMENTS

The following comments provide some explanation for the rationale used in arriving at the decision to issue an MDNS:

Conformance with Comprehensive Plan:

The majority of the project site is designated as appropriate for "Low Density Residential" development, ranging from 0 to 5 dwelling units per acre. Portions of the project site that are located within the East Fork of the Amon Drainage are designated as "Natural Open Space". The proposal would conform to these land use designations in that those portions of the site that are designated as "Natural Open Space" are proposed to be zoned NOS – Natural Open Space. Those portions of the site (west of the east fork of the Amon Drainage) that are designated as "Low Density Residential" are proposed to be zoned R-2S, based on a specific development plan that would result in an average density of 4.67 units/acre, which is consistent with the upper range of the plan's density of 0 to 5 units/acre.

These comprehensive plan designations were first put in place by the City in 1997, with the adoption of its comprehensive plan. At that time, the City relied on the provisions of WAC 197-11-210 to integrate GMA (Growth Management Act) and SEPA (State Environmental Policy Act) requirements into a single document that served as both a comprehensive plan and an environmental impact statement. Portions of that planning document that are pertinent to this action are reprinted below:

Chapter 4 Land Use Element – Population (page 4.3-3)
Mitigation
*Consistent with GMA requirements, the City of Richland has considered the 20 year OFM population allocation in identifying the IUGA (Interim Urban Growth Boundary) to ensure sufficient land and service capacity to meet projected populations at urban densities and service standards. The City has adequate capacity within its current city limits to accommodate future growth under the Preliminary Draft Preferred Alternative (*the alternative that was adopted by the City*) with surplus capacity remaining. No further mitigation is recommended.*
Unavoidable Adverse Impact
The population of the City of Richland and its IUGA is expected to increase, with or without adoption of the Comprehensive Plan. Over the 20 year planning horizon, this increase will create additional demands on housing, capital facilities, utilities and the transportation system.

Chapter 4 – Land Use Element – Land Use Distribution (Page 4.4-11
Mitigation
The City of Richland has adequate capacity to accommodate the types and levels of growth within the IUGA (Interim Urban Growth Area). Land use goals and policies have

*been developed to help reduce the potential for impact resulting from changes to the City's land use and development pattern. The Preliminary Draft Preferred Alternative (*the alternative that was adopted by the City*) also encourages the economical use of existing municipal services while discouraging expansion of the IUGA during the planning period. Implementation of goals and policies and enforcement of development regulations would help to ensure that any impact resulting from future development would be minimized or reduced to a level of non-significance. No further mitigation is recommended.*

Unavoidable Adverse Impact

Changes in land use and development patterns in the Richland and its IUGA will continue, with or without adoption of the comprehensive plan under GMA. Over the long term, that change will create additional demands on capital facilities, utilities and the transportation system. The demand for housing, including affordable housing, is likely to increase.

Chapter 4 Land Use Element – Sensitive Areas (page 4.5-6)

Mitigation

GMA requires adoption of regulations to protect critical areas (RCW 36.70A.060); the City of Richland has adopted regulations identified in their Sensitive Areas Ordinance No. 48-93 to protect critical areas. The SAO contains standards, guidelines, criteria and requirements to identify, analyze and mitigate probable impacts on sensitive areas and geologically hazardous areas and to enhance and restore the areas where possible. The goal of the regulations is to avoid environmental impact where feasible and reasonable. In appropriate circumstances, impact on sensitive and geologically hazardous areas resulting from regulated activities may be minimized, rectified, reduced, or compensated for, consistent with the requirements of the Ordinance (City of Richland 1993).

Unavoidable Adverse Impact

Changes in land use and development patterns in the Richland IUGA will continue, with or without adoption of the Comprehensive Plan. Over time, changes in land use and development patterns will result in increased risk of impact on wetlands and habitat, increased erosion and sedimentation, and potential landslide and seismic damage in some developed areas.

Chapter 4 – Land Use Element – Open Space (page 4.5-10)

Mitigation

Consistent with the GMA, the City of Richland has developed goals and policies for the protection of open space. Implementation of these goals and policies, as well as those policies contained in the Tapteal Greenway Plan, would help to ensure that designated open space within the Richland IUGA is retained. No further mitigation is recommended.

Unavoidable Adverse Impact

Changes in land use and development patterns within the Richland IUGA will continue, with or without adoption of the Comprehensive Plan. Due to the large land holdings within the City, it is not likely that those changes would create pressure for conversion of open space to urban uses. No unavoidable adverse impact on open space is expected.

Conclusion:
The Plan/EIS anticipated that the City would grow overall and that this particular site would likely be developed with low density residential housing. The plan anticipated that there would be increased demands on housing, capital facilities, utilities and the transportation system and that additional pressures would be placed on wetlands and habitat areas. These were considered to be unavoidable adverse impacts associated with the development of the City in accordance with the comprehensive plan. These impacts are mitigated through the implementation of City regulations pertaining to critical areas which have resulted in an identification of wetland areas and wetland buffers that are designed to protect both the wetlands and provide habitat. The proposed project would observe those buffers and there are mitigation measures included in the MDNS, based on a biological report prepared by a qualified consultant, to ensure that these sensitive areas are protected throughout the construction process. Additionally, a geological hazards report was prepared by a qualified consultant and evaluated the suitability of soils on-site for the proposed project. A number of mitigating measures were identified in this report and have been included as mitigation measures in the MDNS. The proposal would be consistent with the housing densities called for in the comprehensive plan and natural open space areas called for in the plan would be protected through the imposition of natural open space zoning and through the application of a conservation easement as called for in the MDNS.

Conformance with Transportation Plans
The City's Transportation Plan calls for the extension of a collector street (Rachel Road) to cross the site in an east-west direction. This collector street is eventually intended to provide a connection between Steptoe Street and Leslie Road. The plan also calls for the southerly extension of Bellerive Drive to connect to Rachel Road. The City's transportation plan included an analysis of traffic volumes expected to occur at full development of the South Richland area. System wide improvements necessary to carry the projected traffic flows at full build-out and with the desired level of service were identified and included in the South Richland Collector Street Financing Plan. This plan became the basis for the road mitigation fee program the City adopted under RMC 12.03, which calls for the payment of road mitigation fees. As the proposed project is consistent with the transportation plan, the payment of road mitigation fees and the construction of those portions of the collector road system that cross the project site adequately mitigate the traffic impacts of the project without the need for additional traffic studies. Note: The foregoing statement applies only to the residential/school portions of the project that are included in this phase of review. The proposed commercial land uses along the eastern portion of the project site will require the preparation of a traffic study to determine the traffic impacts associated with commercial development.

Conformance with Utility Plans
The City provides water, sewer and electrical power services and has adopted utility plans to be able to serve the projected levels of development that are anticipated in the City's comprehensive plan. The City has sized its utility systems to be able to extend services to the project site and has the overall capacity within its systems to accommodate the proposed development. Utility lines will need to be extended to the project site, and under City standards, the developer is responsible for absorbing the costs of utility line extensions. Under City development regulations, specific plans for utility line extensions will have to be designed by a professional engineer and submitted to the City for review and approval. Once approved, the developer will be responsible for installing utility lines in accordance with the approved plans. This work will be reviewed by City inspectors. No adverse environmental impacts associated with utility extensions are anticipated.

Stormwater
The City requires new development to comply with the State's Stormwater Management regulations. Stormwater permits may also be required by the Department of Ecology. The geological hazards report prepared by the applicant's consultant, identified a number of mitigating measures relating to stormwater that have been included as conditions in the MDNS.

Parks
The project site is immediately adjacent to a Claybell Park, which is a newly expanded, City owned Community Park. The proposed development includes a trail system that would extend through the site and connect to existing trails within the adjacent Amon Preserve. In accordance with Richland Municipal Code Chapter 22.12, the project will be required to pay park mitigation fees. The design of the project and the payment of mitigation fees are sufficient to mitigate the impacts of the project on the City park system.

CONDITIONS FOR MITIGATING ENVIRONMENTAL IMPACTS

1) All project slopes shall meet or be designed and constructed to meet a minimum factor of safety of 1.5 for the static condition.

2) Detailed geotechnical reports shall be prepared by a qualified consultant, submitted to the City for review and approval prior to any on-site earth moving activities and shall incorporate the recommendations of the November 2013 "Geotechnical Site Investigation/Geologic Hazards Assessment and Critical Areas Report" prepared by GN Northern, Inc. Grading activities shall be monitored by geotechnical professionals throughout the construction of each phase of the project.

3) Seismic design for the project shall comply with the 2012 edition of the International Building Code.

4) The placement of fill along the southerly boundary of the site, adjacent to the Burlington Northern Railroad, shall be reviewed by a qualified consultant.

5) Stormwater control measures shall be implemented during construction activities, utilizing best management practices in accordance with the Storm Water Control Manual for Eastern Washington and as identified by permit conditions issued by the City of Richland and or the Washington State Department of Ecology. No stormwater discharge will be permitted within 200 feet of the riparian community associated with the west fork of the Amon Basin. All stormwater will be infiltrated on-site.

6) An erosion control plan shall be prepared by the applicant and submitted to the City of Richland for review and approval. The plan shall be designed to prevent erosion from occurring within the Amon Wasteway channel and from occurring in the Amon Basin located immediately adjacent to and west of the site. Erosion control measures shall be maintained throughout the construction of the project.

7) A dust control plan shall be prepared by the applicant and approved by the Benton Clean Air Authority prior to the commencement of earth moving or construction activities on-site. Said dust control plan shall be implemented throughout the duration of project construction.

8) The maximum gradient of slopes on the project site shall not exceed 2.5H:1V. Exposed slope faces shall be protected with re-vegetation or other appropriate erosion control measures as delineated in storm water permits.

9) The geotechnical recommendations identified in the November 2013 “Geotechnical Site Investigation/Geologic Hazards Assessment and Critical Areas Report” prepared by GN Northern, Inc relating to Pre-Wetting, Clearing and Grubbing, Subgrade Preparation, Compaction Requirements, Engineered Structural Fill and Imported Structural Fill, Shrink and Swell, Temporary Excavation/Cut , Slope Construction and Protection Guidelines, Key Fill Material and the Native Cut/Existing Ground, Fill Placement on Cut Slope, Fill Slopes, Temporary Excavation and Utility Trenches, construction and protection guidelines, key fill as delineated in pages 15 – 24 of said report, shall be followed.

10) No grading and excavation work shall be permitted on-site without the issuance of a valid grading permit by the City of Richland.

11) The preparation of future lots for home construction shall proceed in conformance with the recommendations included in the Section titled “General Considerations for Lot Design and Construction” (pages 25-30) of the November 2013 “Geotechnical Site Investigation/Geologic Hazards Assessment and Critical Areas Report” prepared by GN Northern, Inc.

12) Construction work within the irrigation Wasteway easement that extends across the site shall not occur unless first authorized by the Kennewick Irrigation District and shall occur only within the irrigation off-season unless otherwise permitted by the Kennewick Irrigation District.

13) Plans for sewer line extension across the northwestern portion of the site, near the wetlands in the adjacent Amon Basin shall be submitted to City of Richland for review and approval. Said plans shall identify adequate provisions for erosion control during construction of said line and shall include re-vegetation plans for disturbed areas following completion of construction. Re-vegetation plans shall be comprised of native plant materials and shall be prepared by a wetland biologist or other qualified professional. Said plans shall include provisions for temporary irrigation until plants become established and shall include provisions for monitoring re-vegetation efforts over time to ensure that plant materials become established.

14) Prior to any construction activities taking place on-site, wetland and buffer areas at the northwest corner of the site shall be marked in the field and shall not be disturbed throughout the construction of the project; however; a pedestrian trail within the buffer area shall be permitted.

15) The western property boundary of the site, which divides the project site from the adjacent Amon Basin Preserve, shall be fenced. Pedestrian access shall be provided only at designated trail locations.

16) Outdoor lighting of homes within the project and adjacent to the Amon Basin Preserve shall be shielded so that light trespass onto the adjacent Amon Basin Preserve is minimized to the greatest extent practical. A note shall be placed on the final plat advising future lot purchasers of this requirement. All exterior lighting within the project shall comply with the provisions of RMC Chapter 23.58.

17) The applicant shall submit a landscaping plan for all open space areas proposed within the project site to the City of Richland for review and approval. Said plan shall be prepared by a wildlife biologist or similar qualified professional. The intent of the plan is to provide wildlife habitat within open space areas.

18) The applicant shall submit a pedestrian trail plan that identifies all trail locations within the project site to the City of Richland for review and approval. Said trail plan shall provide pedestrian access throughout the site and is intended to focus public use of the open space areas onto the trail system. The trail plan shall identify which specific sections of trail will be constructed with each phase of the project. Said trail plan shall provide for access to both the Amon Basin Preserve located immediately west of the project site and to Claybell Park, which is located immediately north of the project site.

19) The applicant shall comply with City and state noise standards throughout the construction of the project.

20) The areas identified as Natural Open Space in the proposed plan shall be placed in a conservation easement.

21) Maintenance responsibilities of the trail system shall be identified within Conditions, Covenants and Restrictions (CCRs) drafted for the project and the trail maintenance provisions of the CCRs shall be subject to review and approval by the City of Richland.

22) Disturbance to natural open space areas shall be minimized to the greatest degree possible in order to preserve the largest amount of native vegetation and wildlife habitat. Natural open space areas shall be marked in the field prior to the initiation of construction activities on-site. Areas designed for road crossings or trail construction shall be exempt from this requirement.

23) A note shall be placed on the final plat on any lot that lies adjacent to the Burlington Northern Railroad along the project's southern boundary advising future lot purchasers that noise impacts or other impacts associated with the operation and maintenance of the railroad may interfere with the normal enjoyment of their residence.

24) Lots within Phase 15 of the proposed project shall comply with all R1-10 zoning district standards for lot size, setback, lot coverage and building height.

25) All lots within the proposed project shall be subject to a development agreement between the City and the applicant that establishes minimum lot size, building setbacks, lot coverage and building height limitations. Said agreement shall ensure that residential development within the project remains consistent with the Low Density Residential designation that is assigned to the project site through the comprehensive plan.

26) Development within the project site shall be subject to the payment of traffic and parks mitigation fees as required under Chapters 12.03 and 22.12 of the Richland Municipal Code.

27) No construction activity shall be permitted within the Bonneville Power Administration easement unless authorized by the Bonneville Power Administration.

28) No construction activity shall be permitted on-site within the Amon Wasteway until such time as state and federal permits have been obtained, if such are deemed necessary.

29) If during grading and construction activities archeological or paleontological resources are uncovered, the developer shall suspend work in that particular area and contact the Washington State Office of Archeology and Historic Preservation to determine a plan for mitigation of the disturbance to the resource.

CITY OF RICHLAND
STATE ENVIRONMENTAL POLICY ACT (SEPA) ADDENDUM TO MITIGATED DETERMINATION OF NON-SIGNIFICANCE
Clearwater Creek

The following addendum has been prepared pursuant to WAC 197-11-625.

Environmental Document Added to or Modified by this Addendum:
The document for which additional information is being provided is the City of Richland Mitigated Determination of Non-Significance – Clearwater Creek Preliminary Plat and Zone Change (File #EA04-14) and dated March 4, 2014.

Proponent Hayden Homes

Location of Proposal West of Steptoe Avenue, South of Claybell Park, North of the Burlington Northern Railroad right-of-way; East of the Amon Basin Preserve I in Section 1, Township 8 North, Range 28 E.W.M.

Lead Agency City of Richland

Description of Proposal (as identified in the MDNS issued by the City of Richland on March 4, 2014) The development of a 131.9 acre site to include the development of 80.6 acres for single family residential development, comprised of 389 lots; the set aside of 23.2 acres for natural open space that would be improved with a pedestrian trail system; the set aside of an 11.7 acre site for a future public school; and the set aside of 15.5 acres for future, unspecified commercial development. The application will require a Comprehensive Plan Amendment to change the designation of 16.45 acres from Low Density Residential to Commercial. The proposal also involves a change of zone of 16.45 acres from Agricultural (AG) to Neighborhood Retail Business (C-1), a change of zone of 6.92 acres of Single Family Residential (R-1-10) to Medium Density Residential (R-2S), a change of zone of 19.01 acres from Agricultural (AG) to Natural Open Space (NOS), and a change of zone of 89.59 acres of Agricultural (AG) to Medium Density Residential (R-2S). For the residential portion of the site a preliminary plat application has been submitted for a 389 detached single family lot subdivision. Within the residential portion of the project, an 11.75 acre site has been reserved as an elementary school site.

This MDNS contemplated the phased review of the project. The applicants have not identified with any specificity the type or nature of commercial development that is proposed for the 16.45 acres located on the eastern portion of the site. For this reason, the City was only able to evaluate the impacts of the proposed residential, school and open space areas which comprise the westerly 115.45 acres of the proposed project. Additional environmental review will be required at the time the applicant submits information concerning the nature of the commercial development proposed for the 16.45 acres in the easterly portion of the site. Traffic studies or other additional information may be required at that time. No action will be taken by the City on the

proposed plan amendment involving the easterly 16.45 acres of the project site until the additional environmental information for this portion of the site is completed.

Purpose of this Addendum: The applicant has modified the Clearwater Creek development proposal to consist of the following elements: A change in zoning on the majority of a 131.9 acre site, which is presently zoned AG – Agricultural. A total of 89.6 acres of the site is requested to be zoned R-2S - Medium Density Residential. Another 17.6 acres is requested to be zoned NOS – Natural Open Space. Additionally, the site would be subdivided into 320 residential lots, a 13.6 acre school site and 11 open space tracts totaling 32.09 acres. The changes from the previous proposal consist of a re-configuration of the proposed school site, increasing the area from 11.7 to 13.6 acres; the provision of additional open space along the western boundary of the site. The total proposed open space area increased from 23.5 acres to 32.09 acres and a decrease in the total number of residential lots from 389 to 320.

SEPA regulations provide than an addendum may be prepared to address changes to a proposal or new proposal-related information that does not substantially change the analysis of significant environmental impacts and alternatives in existing environmental documents (WAC 197-11-706). The City of Richland has prepared this addendum in order to document the amendments to the applicant's request and the nature of the proposal. Based on the analysis summarized in this addendum, the City of Richland has concluded that there is no change in the analysis of significant environmental impacts contained within existing environmental documents caused by the applicant's requested amendment and clarification of the proposal.

The following additional documents have been reviewed:

1. Revised Clearwater Creek Plat Map, dated April 10, 2014;
2. Correspondence from Kennewick Irrigation District, dated March 18, 2014.

Additional Conditions:

1. Tracts J and K as depicted on the plat map of 4/10/14 shall be restricted to open space use and shall be so noted on the final plat.
2. (Modification of Existing Condition) Condition #20 stated that: areas identified as Natural Open Space in the proposed plan shall be placed in a conservation easement. This condition is modified to read as follows: the Natural Open Space areas shall not be modified by the applicant, except as contemplated in the approved plans showing a street crossing, and pedestrian trails.

Responsible Official Rick Simon

Position/Title Planning and Development Services Manager

Address P.O. Box 190, Richland, WA 99352

Date April 18, 2014 **Signature**_____

Beer Falls

Located in a portion of the Section 1, T8N, R28E, W.M.
City of Richland, Benton County, Washington

PROJECT NOTES:

Applicant:
Hayden Homes, LLC
2464 SW Glacier Place, Suite 110
Redmond, OR 97756
Ph. (509) 544-0858
e-mail: nmachiela@hayden-homes.com

Owner of Parcel 101881000001000:
John Michel
2555 W Hwy 24
Othello, WA 99344

Owner of Parcel 101882000001002:
Tom Solbrack
2555 W Hwy 24
Othello, WA 99344

Project Engineer:
PLS Engineering
Travis Johnson
2008 C Street
Vancouver, WA 98663
Ph. (360) 944-6519
Fax (360) 944-6539
e-mail: travis@plsengineering.com

Project Notes:
The site address is 3548 Leslie Road. Benton County identifies the site as Parcels 101881000001000 & 101882000001002.

Parcel 101881000001000 is currently zoned Agriculture (AG) & Parcel 101882000001002 is currently zoned Single Family Residential (R1-10). The comprehensive plan designation for Parcel 101881000001000 is natural open space within the 400' Amon Wasteway Easement and Low Density Residential (0-5 units/acre) in the remaining areas. The comprehensive plan designation for Parcel 101882000001002 is Low Density Residential (0-5 units/acre).

A Change of zone application has been submitted to rezone both parcels to R-2S excluding the Amon Wasteway Easement area, which is requested to be rezoned to Natural Open Space. A Comprehensive Plan Amendment and Change of Zone application has also been submitted to rezone the remaining area of parcel 101881000001000 to C-1, Neighborhood Retail Business and for a revised Comprehensive Plan designation of Commercial.

Lot Setbacks:
Front Building = 15'
Front Garage = 18'
Side = 6'
Street Side = 15'
Rear = 20'

Total Site Area - 131.97 acres (5,748,806 sq ft).

Total Number of Commercial Lots = 3

Total Number of Residential Lots = 460
Phase 1: 7 Lots
Phase 2: 26 Lots
Phase 3: 31 Lots
Phase 4: 30 Lots
Phase 5: 29 Lots
Phase 6: 26 Lots
Phase 7: 24 Lots
Phase 8: 34 Lots
Phase 9: 20 Lots
Phase 10: 29 Lots
Phase 11: 25 Lots
Phase 12: 31 Lots
Phase 13: 21 Lots
Phase 14: 20 Lots
Phase 15: 21 Lots
Phase 16: 20 Lots
Phase 17: 21 Lots
Phase 18: 21 Lots
Phase 19: 24 Lots

Average Lot Size = 6,353 sq ft

Density:
Area: 4,203,830 SQ FT / 96.51 Acres
Total lots: 460 Lots
Density: 4.77 units per acre
Amon Wasteway & Lots 1, 2 & 3 of Phase 20 are not included in the area for the Density Calculations.

Commercial:
Lot 1: 145,386 SQ FT / 3.34 Acres

Lot 2: 457,483 SQ FT / 10.50 Acres

Lot 3: 74,268 SQ FT / 1.70 Acres

Open Space = 1,013,491 SQ FT / 23.27 Acres

Right-of-way Dedication to City of Richland = 25.62 acres (1,116,203 sq ft)

Public Water Purveyor = City of Richland
Public Sewer Purveyor = City of Richland
Irrigation Purveyor = City of Richland

There are no known wells or septics on site. If any should be found during site development they will be properly abandoned.

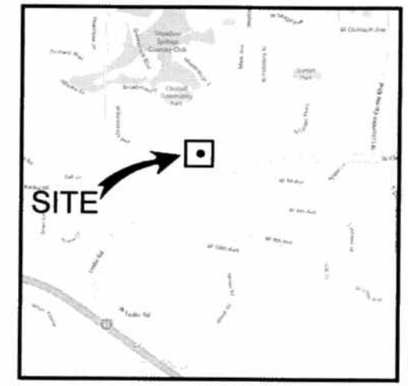
Pedestrian facilities will be provided onsite by way of 5' sidewalks along the proposed roadway improvements. Within the open space areas a 6' wide trail system is proposed as shown. Exact location will be field fitted as needed.

Tracts A-J are proposed to be dedicated to the City of Richland.

Bellerive Road & Center Parkway are classified as Arterial Collector roadways. Road 9 is classified as a Local Street (Single Frontage). All other roadways are classified as Local Streets.

Contour data shown on the existing conditions plan is from topographical survey data prepared by Stratton Surveying of Kennewick, Washington.

Datum:
City of Richland Datum, NAVD 88 Elevation 552.46', Southwest Corner of Section 36.



VICINITY MAP
NOT TO SCALE

PLS ENGINEERING
PH (360) 944-6519 | FAX (360) 944-6539
2008 C Street, Vancouver, WA 98663
Consulting Engineers & Planners

Preliminary Plat For:
Beer Falls
A Site Located In Richland, Washington

Revisions		
A	6/13/13	Submitted For Review
B		
1		
2		
3		
4		

TGJ

Project No. 2291
SCALE: H: 1"=150' V: N/A
DESIGNED BY: TGJ
DRAFTED BY: TGJ
REVIEWED BY: AJG

1
6

Clearwater Creek

Located in a portion of the Section 1, T8N, R28E, W.M.
City of Richland, Benton County, Washington

PROJECT NOTES:

Applicant:
Hayden Homes, LLC
2464 SW Glacier Place, Suite 110
Redmond, OR 97756
Ph. (509) 544-0858
e-mail: nmachiela@hayden-homes.com

Owner of Parcel 101881000001000:
John Michel
2555 W Hwy 24
Othello, WA 99344

Owner of Parcel 101882000001002:
Tom Solbrack
2555 W Hwy 24
Othello, WA 99344

Project Engineer:
PLS Engineering
Travis Johnson
2008 C Street
Vancouver, WA 98663
Ph. (360) 944-6519
Fax (360) 944-6539
e-mail: travis@plsengineering.com

Project Notes:
The site address is 3548 Leslie Road. Benton County identifies the site as Parcels 101881000001000 & 101882000001002.

Parcel 101881000001000 is currently zoned Agriculture (AG) & Parcel 101882000001002 is currently zoned Single Family Residential (R1-10). The comprehensive plan designation for Parcel 101881000001000 is natural open space within the 400' Amon Wasteway Easement and Low Density Residential (0-5 units/acre) in the remaining areas. The comprehensive plan designation for Parcel 101882000001002 is Low Density Residential (0-5 units/acre).

A Change of zone application has been submitted to rezone both parcels to R-2S excluding the Amon Wasteway Easement area, which is requested to be rezoned to Natural Open Space. A Comprehensive Plan Amendment and Change of Zone application has also been submitted to rezone the remaining area of parcel 101881000001000 to C-1, Neighborhood Retail Business and for a revised Comprehensive Plan designation of Commercial.

Lot Setbacks:
Front Building = 15'
Front Garage = 18'
Side = 6'
Street Side = 15'
Rear = 20'

Total Site Area - 131.97 acres (5,748,814 sq ft).

Total Number of Commercial Lots = 3

Total Number of Residential Lots = 321
Phase 1: 32 Lots
Phase 2: 33 Lots
Phase 3: 30 Lots
Phase 4: 32 Lots
Phase 5: 26 Lots
Phase 6: 7 Lots
Phase 7: 26 Lots
Phase 8: 23 Lots
Phase 9: 29 Lots
Phase 10: 24 Lots
Phase 11: 21 Lots
Phase 12: 38 Lots

Average Residential Lot Size = 6,642 sq ft

Density:
Area: 3,091,285 SQ FT / 70.97 Acres
Total lots: 321 Lots
Density: 4.52 units per acre
Amon Wasteway, commercial lots, & school lot are not included in the area for the Density Calculations.

Commercial:
Lot 1: 145,234 SQ FT / 3.33 Acres
Lot 2: 457,327 SQ FT / 10.50 Acres
Lot 3: 74,268 SQ FT / 1.70 Acres

School:
Lot 1: 594,868 SQ FT / 13.66 Acres

Open Space = 1,386,832 SQ FT / 31.84 Acres

Right-of-way Dedication to City of Richland = 22.02 acres (959,074 sq ft)

Public Water Purveyor = City of Richland
Public Sewer Purveyor = City of Richland
Irrigation Purveyor = City of Richland

There are no known wells or septics on site. If any should be found during site development they will be properly abandoned.

Pedestrian facilities will be provided onsite by way of 5' sidewalks along the proposed roadway improvements. Within the open space areas a 6' wide trail system is proposed as shown. Exact location will be field fitted as needed.

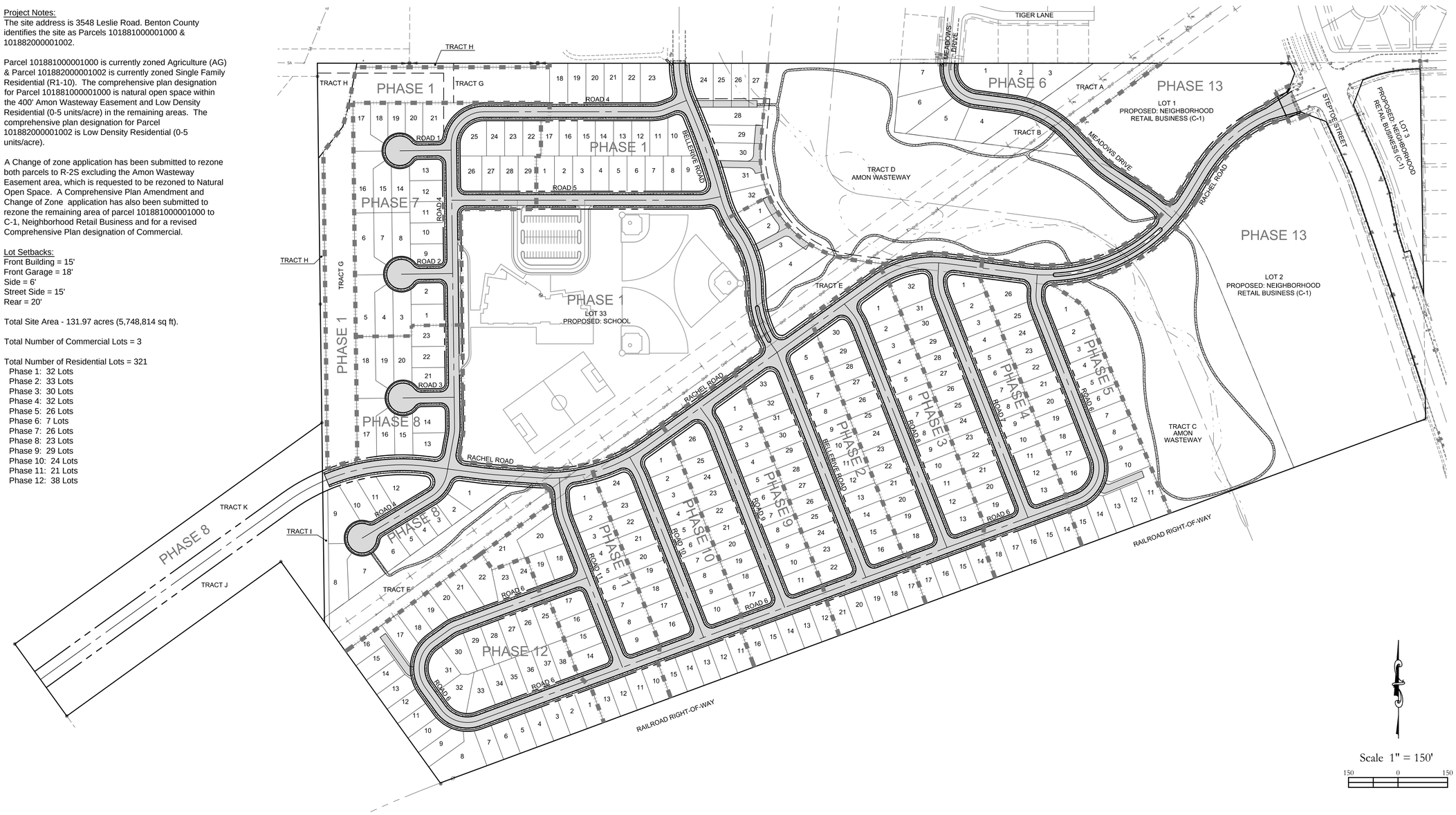
Tracts A-H are proposed to be owned and maintained by Hayden Homes, LLC.

Bellerive Road from Rachel Road to the north property boundary and Rachel Road are classified as Arterial Collector roadways. All other roadways are classified as Local Streets.

Contour data shown on the existing conditions plan is from topographical survey data prepared by Stratton Surveying of Kennewick, Washington.

Datum:
City of Richland Datum, NAVD 88 Elevation 552.46', Southwest Corner of Section 36.

VICINITY MAP
NOT TO SCALE



PLS ENGINEERING

PH (360) 944-6519 | Fax (360) 944-6539
2008 C Street, Vancouver, WA 98663 | Consulting Engineers & Planners

Preliminary Plat For:
Clearwater Creek
A Site Located In Richland, Washington

Revisions			
A	11 / 12 / 13	Submitted For Review	TGJ
B	2 / 4 / 14	Revised	TGJ
1	3 / 19 / 14	Revised	TGJ
2			
3			
4			

Project No. 2291	
SCALE:	H: 1"=150' V: N/A
DESIGNED BY:	TGJ
DRAFTED BY:	TGJ
REVIEWED BY:	AJG

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Clearwater Creek

Located in a portion of the Section 1, T8N, R28E, W.M.
City of Richland, Benton County, Washington

PROJECT NOTES:

Applicant:
Hayden Homes, LLC
2464 SW Glacier Place, Suite 110
Redmond, OR 97756
Ph. (509) 544-0858
e-mail: nmachiela@hayden-homes.com

Owner of Parcel 101881000001000:
John Michel
2555 W Hwy 24
Othello, WA 99344

Owner of Parcel 101882000001002:
Tom Solbrack
2555 W Hwy 24
Othello, WA 99344

Project Engineer:
PLS Engineering
Travis Johnson
2008 C Street
Vancouver, WA 98663
Ph. (360) 944-6519
Fax (360) 944-6539
e-mail: travis@plsengineering.com

Project Notes:
The site address is 3548 Leslie Road. Benton County identifies the site as Parcels 101881000001000 & 101882000001002.

Parcel 101881000001000 is currently zoned Agriculture (AG) & Parcel 101882000001002 is currently zoned Single Family Residential (R1-10). The comprehensive plan designation for Parcel 101881000001000 is natural open space within the 400' Amon Wasteway Easement and Low Density Residential (0-5 units/acre) in the remaining areas. The comprehensive plan designation for Parcel 101882000001002 is Low Density Residential (0-5 units/acre).

A Change of zone application has been submitted to rezone both parcels to R-2S excluding the Amon Wasteway Easement area, which is requested to be rezoned to Natural Open Space. A Comprehensive Plan Amendment and Change of Zone application has also been submitted to rezone the remaining area of parcel 101881000001000 to C-1, Neighborhood Retail Business and for a revised Comprehensive Plan designation of Commercial.

Lot Setbacks:
Front Building = 15'
Front Garage = 18'
Side = 6'
Street Side = 15'
Rear = 20'

Total Site Area - 131.97 acres (5,748,814 sq ft).

Total Number of Commercial Lots = 3

Total Number of Residential Lots = 320
Phase 1: 32 Lots
Phase 2: 33 Lots
Phase 3: 30 Lots
Phase 4: 32 Lots
Phase 5: 26 Lots
Phase 6: 7 Lots
Phase 7: 26 Lots
Phase 8: 22 Lots
Phase 9: 29 Lots
Phase 10: 24 Lots
Phase 11: 21 Lots
Phase 12: 38 Lots

Average Residential Lot Size = 6,662 sq ft

Density:
Area: 3,091,285 SQ FT / 70.97 Acres
Total lots: 320 Lots
Density: 4.52 units per acre
Amon Wasteway, commercial lots, & school lot are not included in the area for the Density Calculations.

Commercial:
Lot 1: 145,234 SQ FT / 3.33 Acres
Lot 2: 457,327 SQ FT / 10.50 Acres
Lot 3: 74,268 SQ FT / 1.70 Acres

School:
Lot 1: 594,311 SQ FT / 13.64 Acres

Open Space = 1,3397,877 SQ FT / 32.09 Acres

Right-of-way Dedication to City of Richland = 21.78 acres (948,953 sq ft)

Public Water Purveyor = City of Richland
Public Sewer Purveyor = City of Richland
Irrigation Purveyor = City of Richland

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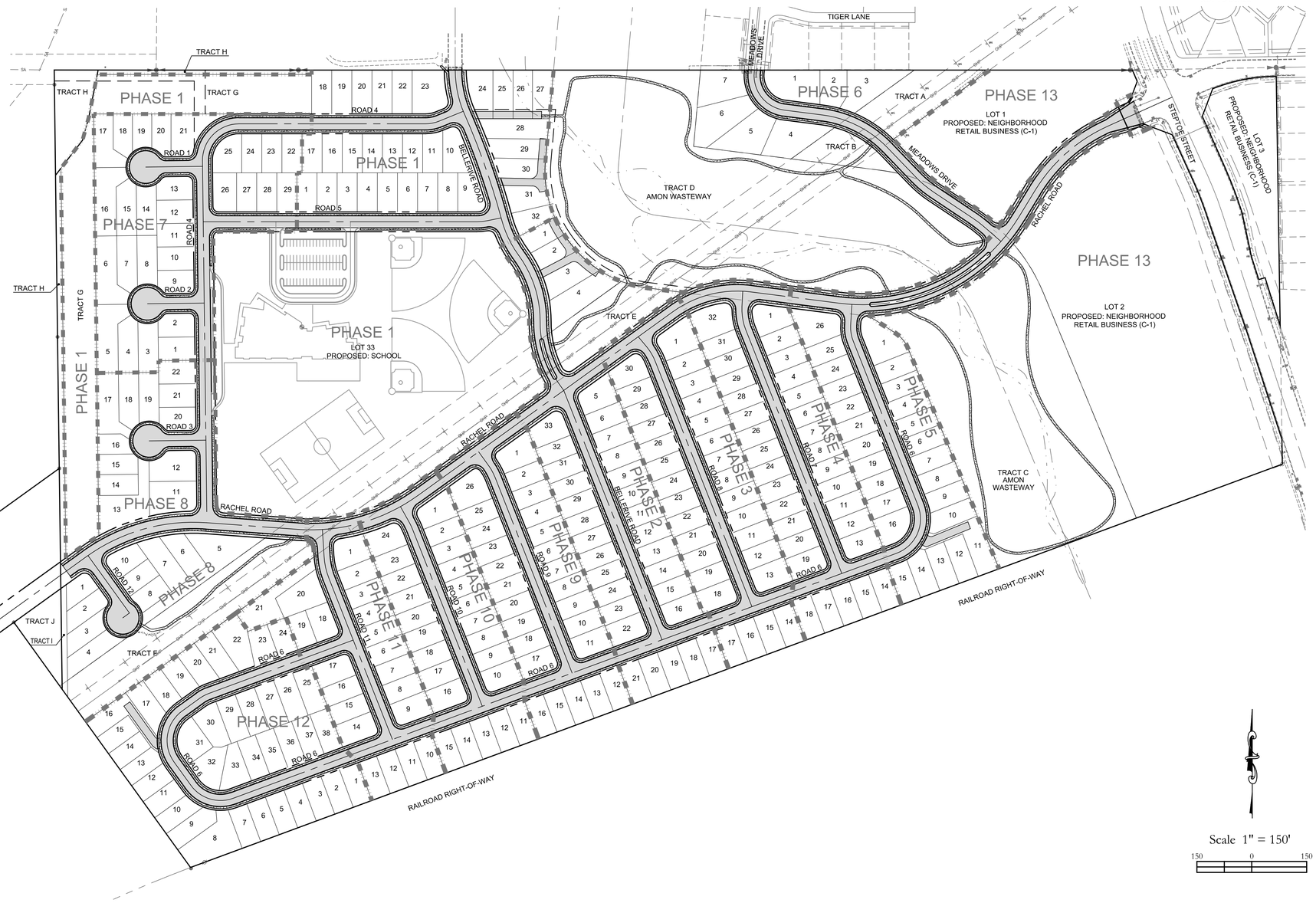

Scale 1" = 150'
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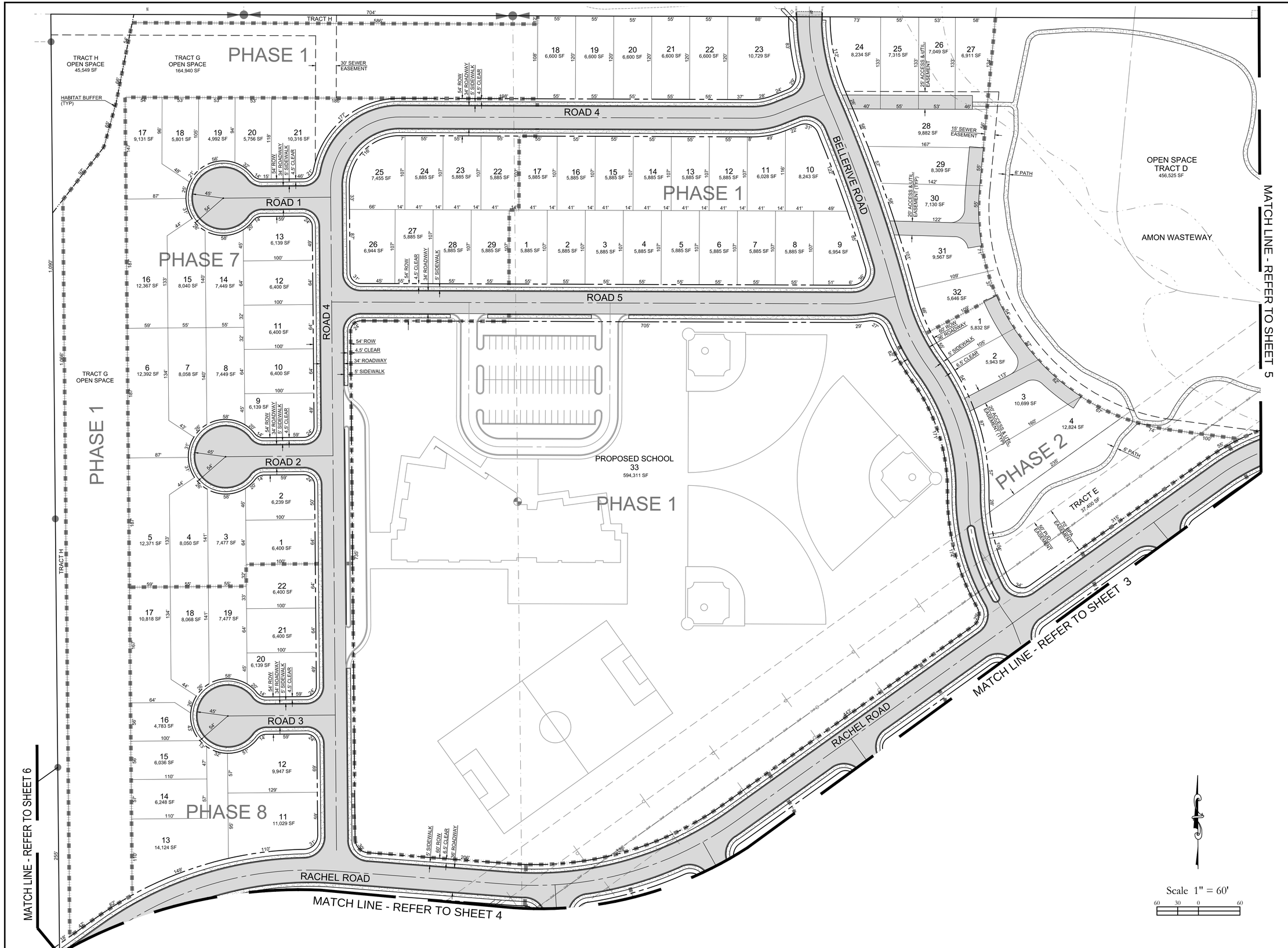

PLS ENGINEERING

Preliminary Plat For:

Clearwater Creek

A Site Located In Clark Richland, Washington

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Project No. 2291	
SCALE:	H: 1" = 60' V: N/A
DESIGNED BY:	TGJ
DRAFTED BY:	TGJ
REVIEWED BY:	AJG

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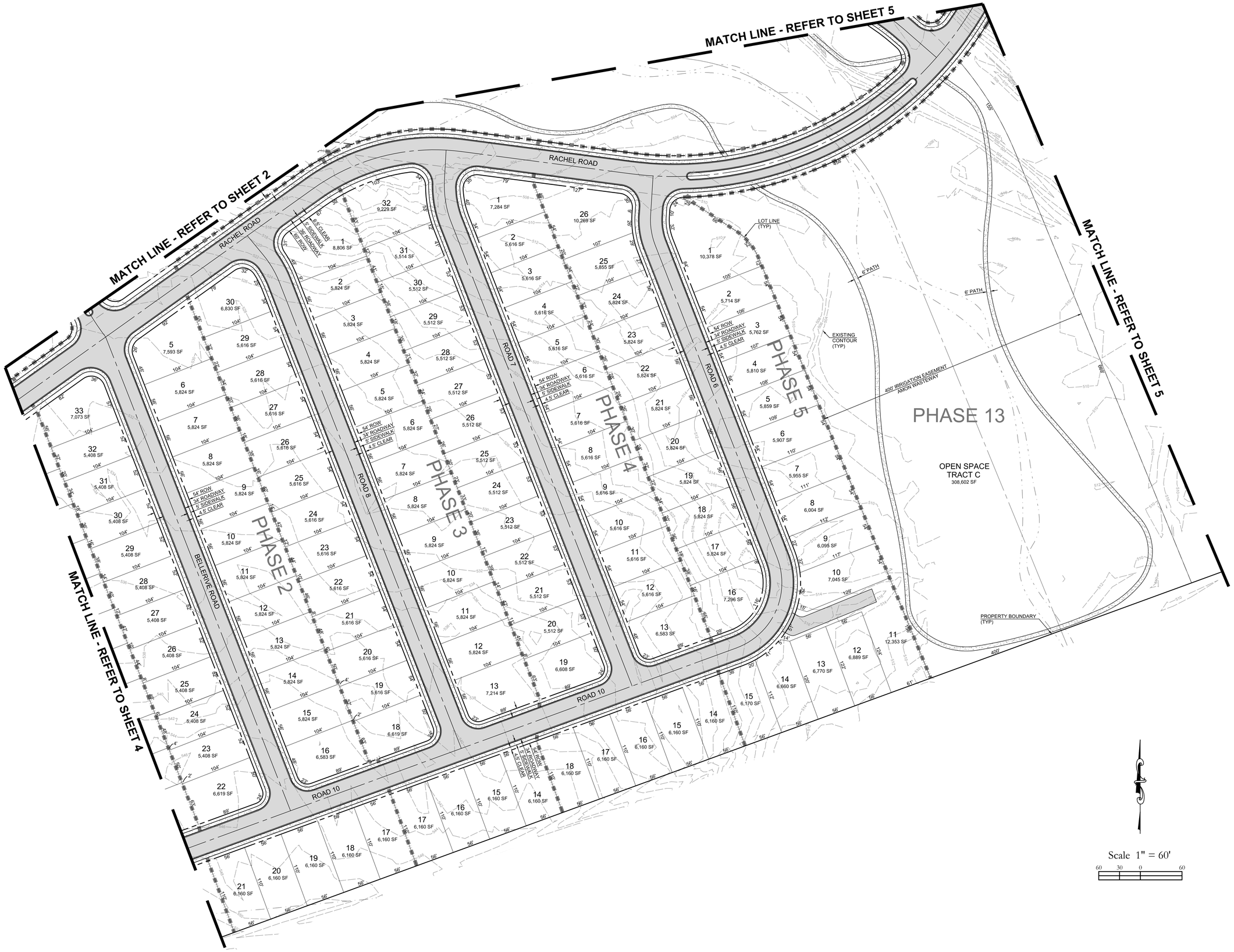

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2008 C Street, Vancouver, WA 98663

Preliminary Plat

Clearwater Creek

A Site Located In Richland, Washington

Consulting Engineers & Planners

Project No. 2291	
SCALE:	H: 1" = 60' V: N/A
DESIGNED BY:	TGJ
DRAFTED BY:	TGJ
REVIEWED BY:	AJG

3 / 6

PLS ENGINEERING

Preliminary Plat For:

Clearwater Creek

A Site Located In Richland, Washington

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Project No. 2291	
SCALE:	H: 1" = 60' V: N/A
DESIGNED BY:	TGJ
DRAFTED BY:	TGJ
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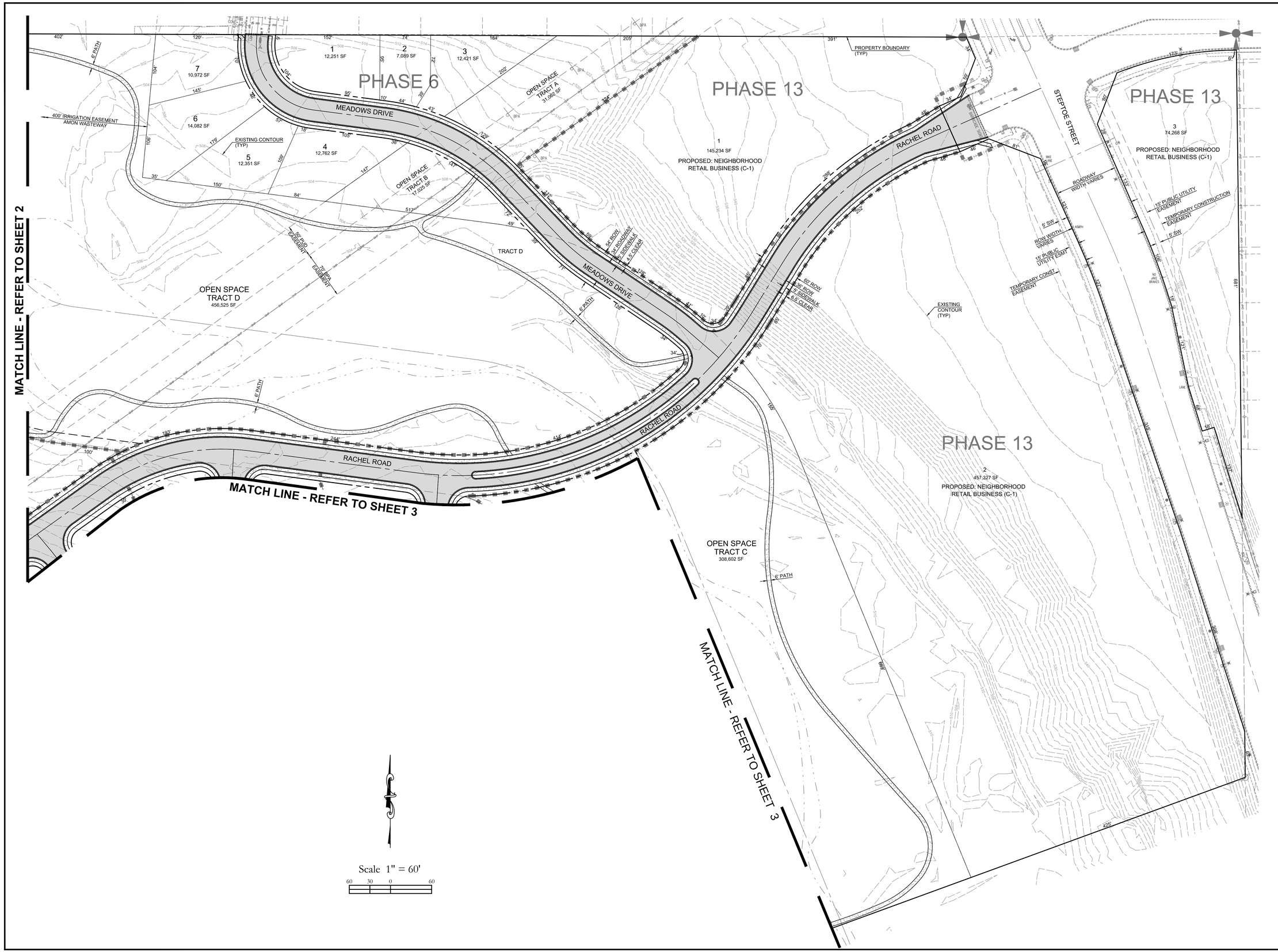

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Clearwater Creek

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Project No. 2291	
SCALE:	H: 1" = 60' V: N/A
DESIGNED BY:	TGJ
DRAFTED BY:	TGJ
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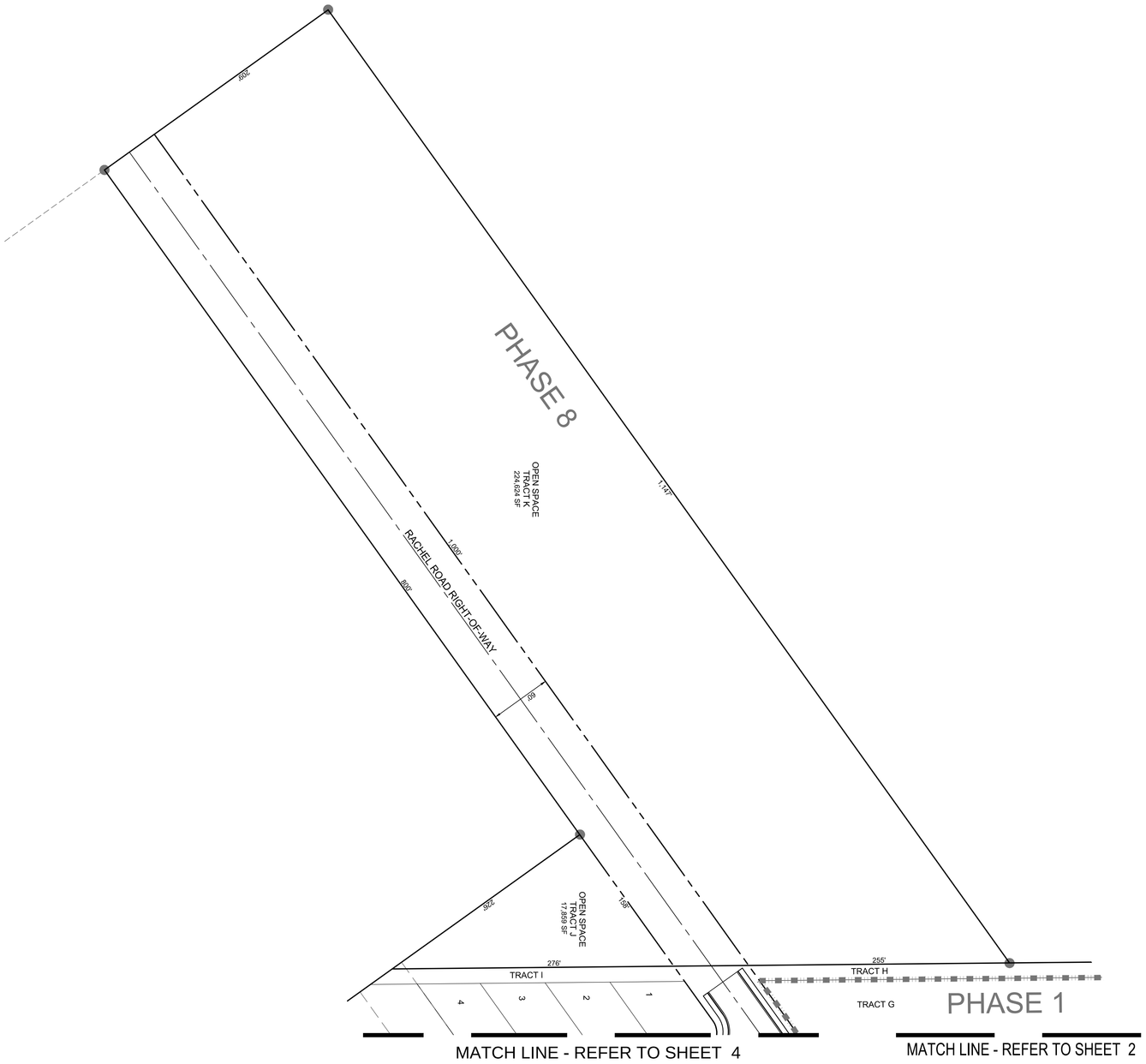
5 / 6



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Preliminary Plat For:

Clearwater Creek

A Site Located In Richland, Washington

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PLS ENGINEERING

Project No.	2291
SCALE:	H: 1" = 60' V: N/A
DESIGNED BY:	TGL
DRAFTED BY:	TGL
REVIEWED BY:	AJG

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