



CITY OF MILWAUKIE

AGENDA

REVISED

September 25, 2018

PLANNING COMMISSION

City Hall Council Chambers
10722 SE Main Street
www.milwaukieoregon.gov

- 1.0 Call to Order - Procedural Matters** — 6:30 PM
- 2.0 Planning Commission Minutes** – Motion Needed
 - 2.1 March 13, 2018
 - 2.2 March 27, 2018
 - 2.3 May 22, 2018 (sent 9/20/18)**
- 3.0 Information Items**
- 4.0 Audience Participation** – This is an opportunity for the public to comment on any item not on the agenda
- 5.0 Public Hearings** – Public hearings will follow the procedure listed on reverse
 - 5.1 Summary: Harmony Park Apartments **(sent 9/20/18)**
Applicant/Owner: Cascadia Planning + Development Services/HPA 2, LLC
Address: 6115 SE Harmony Rd
File: VR-2018-005, NR-2018-002, DEV-2018-006
Staff: Brett Kolver, Associate Planner
- 6.0 Worksession Items**
- 7.0 Planning Department Other Business/Updates**
- 8.0 Planning Commission Committee Updates and Discussion Items** – This is an opportunity for comment or discussion for items not on the agenda.
- 9.0 Forecast for Future Meetings:**
 - October 9, 2018 1. Worksession: Comprehensive Plan Update project update
 - October 23, 2018 1. Public Hearing: HR-2018-001 City Hall Remodel
 - 2. Public Hearing: ZA-2018-005 Housekeeping Code Amendments #1.5

Milwaukie Planning Commission Statement

The Planning Commission serves as an advisory body to, and a resource for, the City Council in land use matters. In this capacity, the mission of the Planning Commission is to articulate the Community's values and commitment to socially and environmentally responsible uses of its resources as reflected in the Comprehensive Plan

1. **PROCEDURAL MATTERS.** If you wish to speak at this meeting, please fill out a yellow card and give to planning staff. Please turn off all personal communication devices during meeting. For background information on agenda items, call the Planning Department at 503-786-7600 or email planning@milwaukieoregon.gov. Thank You.
2. **PLANNING COMMISSION MINUTES.** Approved PC Minutes can be found on the City website at www.milwaukieoregon.gov.
3. **CITY COUNCIL MINUTES** City Council Minutes can be found on the City website at www.milwaukieoregon.gov/meetings.
4. **FORECAST FOR FUTURE MEETING.** These items are tentatively scheduled, but may be rescheduled prior to the meeting date. Please contact staff with any questions you may have.
5. **TIME LIMIT POLICY.** The Commission intends to end each meeting by 10:00pm. The Planning Commission will pause discussion of agenda items at 9:45pm to discuss whether to continue the agenda item to a future date or finish the agenda item.

Public Hearing Procedure

Those who wish to testify should come to the front podium, state his or her name and address for the record, and remain at the podium until the Chairperson has asked if there are any questions from the Commissioners.

1. **STAFF REPORT.** Each hearing starts with a brief review of the staff report by staff. The report lists the criteria for the land use action being considered, as well as a recommended decision with reasons for that recommendation.
2. **CORRESPONDENCE.** Staff will report any verbal or written correspondence that has been received since the Commission was presented with its meeting packet.
3. **APPLICANT'S PRESENTATION.**
4. **PUBLIC TESTIMONY IN SUPPORT.** Testimony from those in favor of the application.
5. **NEUTRAL PUBLIC TESTIMONY.** Comments or questions from interested persons who are neither in favor of nor opposed to the application.
6. **PUBLIC TESTIMONY IN OPPOSITION.** Testimony from those in opposition to the application.
7. **QUESTIONS FROM COMMISSIONERS.** The commission will have the opportunity to ask for clarification from staff, the applicant, or those who have already testified.
8. **REBUTTAL TESTIMONY FROM APPLICANT.** After all public testimony, the commission will take rebuttal testimony from the applicant.
9. **CLOSING OF PUBLIC HEARING.** The Chairperson will close the public portion of the hearing. The Commission will then enter into deliberation. From this point in the hearing the Commission will not receive any additional testimony from the audience, but may ask questions of anyone who has testified.
10. **COMMISSION DISCUSSION AND ACTION.** It is the Commission's intention to make a decision this evening on each issue on the agenda. Planning Commission decisions may be appealed to the City Council. If you wish to appeal a decision, please contact the Planning Department for information on the procedures and fees involved.
11. **MEETING CONTINUANCE.** Prior to the close of the first public hearing, any person may request an opportunity to present additional information at another time. If there is such a request, the Planning Commission will either continue the public hearing to a date certain, or leave the record open for at least seven days for additional written evidence, argument, or testimony. The Planning Commission may ask the applicant to consider granting an extension of the 120-day time period for making a decision if a delay in making a decision could impact the ability of the City to take final action on the application, including resolution of all local appeals.

The City of Milwaukie will make reasonable accommodation for people with disabilities. Please notify us no less than five (5) business days prior to the meeting.

Milwaukie Planning Commission:

Kim Travis, Chair
John Henry Burns, Vice Chair
Adam Argo
Joseph Edge
Sherry Grau
Greg Hemer
Scott Jones

Planning Department Staff:

Denny Egner, Planning Director
David Levitan, Senior Planner
Brett Kelder, Associate Planner
Vera Koliass, Associate Planner
Mary Heberling, Assistant Planner
Alicia Martin, Administrative Specialist II



CITY OF MILWAUKIE

PLANNING COMMISSION MINUTES

City Hall Council Chambers
10722 SE Main Street
www.milwaukieoregon.gov

March 13, 2018

Present: Kim Travis, Chair
Adam Argo
Joseph Edge
Sherry Grau
Scott Jones

Staff: Denny Egner, Planning Director
Brett Kelter Associate Planner
Dan Olsen, City Attorney

Absent: John Henry Burns, Vice Chair
Greg Hemer

1.0 Call to Order – Procedural Matters*

Chair Travis called the meeting to order at 6:30 p.m. and read the conduct of meeting format into the record.

Note: *The information presented constitutes summarized minutes only. The meeting video is available by clicking the Video link at <http://www.milwaukieoregon.gov/meetings>.*

2.0 Planning Commission Minutes — None

3.0 Information Items

Denny Egner, Planning Director, noted that the Volunteer Appreciation Dinner was scheduled for March 29th.

On March 20th, there would be a City Council work session for the Monroe Street Neighborhood Greenway as a review of the impacts of some of the diverters proposed in the Monroe Street Greenway Concept Plan would require additional signals on Harrison St.

4.0 Audience Participation –This is an opportunity for the public to comment on any item not on the agenda. There was none.

5.0 Public Hearings

- 5.1 Summary: Milwaukie High School Renovation
Applicant/Owner: 3J Consulting/North Clackamas School District
Address: 2301 SE Willard St
File: CSU-2017-007, VR-2017-012
Staff: Brett Kelter, Associate Planner

Chair Travis called the hearing to order and read the conduct of quasi-judicial hearing format into the record.

Brett Kelter, Associate Planner, presented the staff report via PowerPoint and reviewed the proposal, project site, and vicinity. The Milwaukie High School site is a nearly 15-acre campus

consisting of athletic fields, tennis court facility, main classroom building, performing arts center, commons building, gymnasium and grandstand facility, and parking lots. Although there was some off-street parking, there were also shared parking agreements with nearby churches. The zoning was primarily residential with some commercial edges, but the renovation area was focused in the R-2 zone.

Mr. Kelper reviewed the primary project elements, including the demolition and replacement of the main classroom building, reconfiguration and additions to parking areas; as well as other improvements including a remodel of the commons building, a new entry plaza, pedestrian and vehicular circulation improvements, improvements to the athletic facilities, and new landscaping. The students would be temporarily located in modular classrooms located on the football field during construction. There would be improvements to pedestrian connections at Lake Rd and 23rd Ave, including wider sidewalks and bike paths, and a pedestrian connection to Adams St as well. The project would also involve street improvements; Northwest Housing Alternatives (NHA), adjacent to the site across Willard St, would also provide street improvements through its own reconstruction project.

Mr. Kelper noted the key issues: sufficient parking facilities, sufficient landscaping and buffering, and whether there would be safe and efficient access during construction. He reviewed the proposal details in relation to the key issues.

- Staff recommended for the school to reinvigorate the transportation demand management (TDM) program to find ways to reduce demand and trips after construction was complete.
- Regarding landscaping, the primary concern was buffering along the eastern edge of the site where a parking lot would be constructed in place of the existing softball field.
- The proposal included paved and fenced pathway connections between the modular classrooms and the commons/performing arts center. However, more information was needed regarding pedestrian, bike, and vehicle access; drop-off and pick-up areas and routes; and how construction would impact the surrounding properties. **Mr. Kelper** noted the proposed improvements for ped/bike connections and drop-off/pick-up areas.

The staff recommendation was for approval of the application with the findings and conditions as presented, and **Mr. Kelper** reviewed the decision-making options.

Mr. Kelper and **Alex Roller, Engineering Technician II**, answered questions from the Commission as follows:

- Regarding the school's ability to follow a TDM program, the recommendation was for the district to bring a TDM proposal back to the Commission for review. Ongoing review or an update timeline would be determined at that time.
- The new building roof, new parking lot, and modifications to the existing parking lot would trigger the predevelopment requirements for stormwater management. The proposal addressed these requirements sufficiently.
- The trip generation was calculated based on the square footage of the building and was not based on enrollment or staff numbers.
- Since the project did not include changes to the accessways on Washington St, those particular nonconformities were allowed to remain as-is.

Chair Travis called for the applicant's testimony.

Andrew Tull, 3J Consulting, 5075 SW Griffith Parkway Ste. 150, Beaverton OR 97005, and **Matt Jacoby, BRIC Architecture, 1233 NW Northrup Ste. 100, Portland OR 97209**, presented for the applicant.

Mr. Tull noted the other applicant team members in the audience and thanked the Commission and staff for their time. The project was a part of a bond measure passed to fund improvements to schools and facilities throughout the North Clackamas School District.

Mr. Jacoby presented the proposal and schematic images of the site plan and site circulation plan during construction, and explained the general timeline of the project. All classrooms would be relocated to a "Mod City" of modular buildings on the football field. The project would provide a new high school and renovated commons that were seismically to code, would include new technology and a maker space, a new secure entry point and vestibule for visitors and secure entries elsewhere, and open connections between the new building and the commons. He noted that a large cedar tree near the new entrance would be removed; although the team tried to design around it, it was not possible to preserve the tree due to grade challenges. A possible heritage tree marker could be incorporated into the entrance courtyard, and materials from the tree could be incorporated elsewhere in the project such as beams, benches, artwork, etc. The original building was built in 1925; however, it had been remodeled and added onto many times and so was difficult to determine what was historic and what was not. The identified historic features would be incorporated or represented throughout the new building, including doorways, beams and woodwork, historic photos, etc.

Mr. Tull noted the team's excitement about this project and added that the School District agreed with the findings and conditions of approval and respectfully requested that the Commission approve the applications.

The applicant answered questions from the Commission.

- The landscaping plan would meet all City requirements for density, including the southeast corner near the new parking lot.
- Due to site constraints, the trash receptacle would be located on the eastern edge of the new parking lot and would include a full enclosure that matched the style of the new building.
- It was assumed that the shared parking agreements between the school and the 2 nearby churches would continue.
- The applicant looked forward to the results of a TDM and would work with staff to continue a possible program.

Chair Travis called for public testimony.

Gary Klein, 10795 SE Riverway Ln Milwaukie, noted the large amount of construction projects in downtown Milwaukie, including this project, the NHA reconstruction project, the Axletree mixed-use development, etc. He reminded the Commission that this project was in a residential neighborhood and asked that consideration be taken with regard to the neighbors and safety. He appreciated the effort by the applicant to incorporate historic elements into the project.

Mr. Egner noted that Leila Aman, the City's new Development Manager, was coordinating between the various projects occurring in downtown and was working with stakeholders, neighbors, etc., to ensure that everything continued smoothly.

Ray Bryan, 11416 SE 27th Ave Milwaukie, Historic Milwaukie Neighborhood District Association Chair, thanked the School District for being great to work with. He noted that the proposal had changed after the NDA had submitted their comments, some of which had been incorporated into the revised plans. He was concerned about the possibility of widening Lake Rd

and would prefer to avoid that for the sake of the neighborhood and the trees along Lake Rd. He asked if the proposed sidewalk design along Willard St would reduce on-street parking for the nearby apartments. He also was concerned about the noise impacts of the trash enclosure location, particularly in terms of pick-up times. One item that the NDA had requested in their comments that was not included in the revised proposal included a proposal for flashing beacon crosswalks on Washington St at 27th Ave, Lake Rd at 27th Ave, and Lake Rd at 23rd Ave. He believed that with better pedestrian facilities, more students would walk to school. Other NDA requests included a good neighbor agreement for the construction and for emergency preparedness measures to be included at the school, as it would be the most seismically-sound building in the area.

Staff answered questions from the Commission.

- **Mr. Roller** stated that a striped crosswalk would be installed across Lake Rd at the east side of 23rd Ave as part of the NHA project. He would look into what triggered a flashing beacon crosswalk rather than a standard striped crosswalk.
- **Mr. Kelver** noted that in past applications, a condition called for the applicant to make an effort toward a good neighbor agreement with the NDA, but that was the extent of the condition.
- Construction could occur on the weekends but within allowable hours.
- The TDM process would involve the applicant returning to the Commission with a proposal that would include a comprehensive look at the onsite parking and programs for students and staff to bike, rideshare, use public transportation, etc., and how to track the progress of the programs.
- **Mr. Egner** noted that, with respect to including on-street parking in the TDM, the City conducted an annual downtown parking study and was also currently developing a downtown parking strategy. Although in the past the high school had not been included in the downtown study, he proposed that school be added so the City could assess the need.
- The right-of-way dedication along Lake Rd to allow for a center left-turn lane was part of both this project and the NHA project and would move Lake Rd toward the cross section identified in the Transportation System Plan (TSP).
- The right-turn-only regulation on Willard St at 27th Ave would remain, and the exit of the southwest parking lot would also be right-turn-only.

Chair Travis called for the applicant's rebuttal.

Mr. Tull responded to testimony as follows:

- The applicant would work with the City on alternatives for the Lake Rd cross section, but at this point the design was what was required by the TSP.
- With regard to the sidewalk along the north side of Willard St, it appeared that it would not result in a loss of parking spaces; however, a survey would be needed to verify this.
- There was little option for a specific pick-up time by the garbage haulers.
- There was a condition to remove barriers to ADA crossings around the site; therefore, a number of the connections and crosswalks would be evaluated and likely improved.
- The School District and project team were being proactive in communication with the neighbors and were available should there be any issues. **Mr. Jacoby** reviewed the communication flyers that would be sent out this week.
- Emergency preparedness was a good consideration for the possible future use of the site, but at this point the primary task was to complete the school project. **Mr. Jacoby** added that there were resiliency-related features included in the project such as an oversized backup generator, flexible waterlines, etc.

- The sidewalk design for Lake Rd and 23rd Ave was flexible in order to preserve the trees at that intersection.

Chair Travis closed public testimony.

Planning Commission Deliberation

The Commission supported the application with the proposed conditions and appreciated that the key issues were adequately addressed. They also appreciated the neighborhood outreach and the historic elements that were included in the design, and believed that the new high school would be a state-of-the-art, forward-thinking resource for the community. **Chair Travis** was confident that any possible concerns or issues would be handled appropriately by the applicant, staff, and neighbors.

Commissioner Edge moved and Commissioner Argo seconded to approve land use applications CSU-2017-007 and VR-2017-012 for the Milwaukie High School Renovation Project at 2301 SE Willard St with the recommended findings and conditions as presented. The motion passed unanimously.

6.0 Worksession Items — None

7.0 Planning Department Other Business/Updates

8.0 Planning Commission Discussion Items

Chair Travis noted the Comprehensive Plan Advisory Committee meeting was the previous week. The group was working on Block 1 goals that included Citizen Involvement, Economic Development, Urban Growth Management Area, and Arts and Culture. A town hall was scheduled for April 4th and would help to provide further feedback from the community.

Commissioner Edge stated that Clackamas County was awarded a Metro 2040 grant for a planning project in the Oak Grove area just south of the Island Station neighborhood. He was on the project management team for the grant and offered to provide updates to the Commission as the project progressed.

9.0 Forecast for Future Meetings:

- | | |
|----------------|--|
| March 27, 2018 | 1. Public Hearing: CPA-2018-001 Scott Park Master Plan Removal |
| April 10, 2018 | 1. Public Hearing: CSU-2018-002 Ledding Library Reconstruction |

Meeting adjourned at approximately 8:43 p.m.

Respectfully submitted,

Alicia Martin, Administrative Specialist II

Kim Travis, Chair



CITY OF MILWAUKIE

PLANNING COMMISSION MINUTES

City Hall Council Chambers
10722 SE Main Street
www.milwaukieoregon.gov

March 27, 2018

Present: Kim Travis, Chair
John Henry Burns, Vice Chair
Joseph Edge
Greg Hemer
Scott Jones

Staff: Vera Kolias, Associate Planner

Absent: Adam Argo
Sherry Grau

1.0 Call to Order – Procedural Matters*

Chair Travis called the meeting to order at 6:30 p.m. and read the conduct of meeting format into the record.

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2.0 Planning Commission Minutes — None

3.0 Information Items

Vera Kolias, Associate Planner, noted that the Comprehensive Plan Community Town Hall event was schedule for the following Tuesday, April 4th.

4.0 Audience Participation –This is an opportunity for the public to comment on any item not on the agenda. There was none.

5.0 Public Hearings

- 5.1 Summary: Scott Park Master Plan Removal from the Comprehensive Plan
Applicant: City of Milwaukie
File: CPA-2018-001
Staff: Vera Kolias, Associate Planner

Chair Travis called the hearing to order and read the conduct of legislative hearing format into the record.

Ms. Kolias presented the staff report via PowerPoint and reviewed the background and proposal. The Scott Park Master Plan was created in 1990 to improve the park's identity, safety, and visibility. The improvements called for in the master plan have not been completed and some improvements that have occurred do not meet the plan. The reason for removing the plan as an ancillary document of the Comprehensive Plan was as a result of the proposed reconstruction and expansion of the Ledding Library. The library project conflicts with some specific elements of the master plan but not with the goals of the plan. A number of the

elements and goals of the plan would be accommodated by the proposed library project such a walking path to the library and Spring Creek, the library's corner design, stormwater gardens, and native plantings and removal of invasive plants. In addition, the Milwaukie Urban Renewal Plan included improvements to Scott Park and North Clackamas Parks and Recreation District (NCPRD) had a capital improvement project identified to develop a new Scott Park Master Plan.

Ms. Koliass stated that another key issue involved Metro's Title 13 Goal Nature in Neighborhoods and reiterated that the library project would include significant improvements and mitigation to the water quality resources and habitat conservation areas on the site. Removing the plan from the Comprehensive Plan did not affect the purpose of Title 13.

The primary intent of the removal was to remove an outdated master plan and reduce barriers for the Ledding Library project. **Ms. Koliass** added that the staff recommendation was for the Commission to recommend approval to City Council and she reviewed the decision-making options.

Ms. Koliass clarified that improvements to parks that were not consistent with old and outdated master plans essentially would be in violation of the Comprehensive Plan. She added that a discussion through the Comprehensive Plan project was to remove the park master plans as specific plan documents from the Comprehensive Plan.

Commissioner Hemer suggested a recommendation to City Council to ensure that NCPRD make the development of a new Scott Park Master Plan a priority.

Chair Travis closed public testimony.

Commissioner Edge agreed with the proposal and noted that the master plan was created before the City moved to have NCPRD manage its parks; therefore, the master plan was essentially a hindrance to improvements. He agreed with Commissioner Hemer's suggestions, particularly in terms of the park's location and proximity to the library.

Vice Chair Burns noted that there were a number of parks without master plans. NCPRD had the development of a new Scott Park Master Plan identified and funded as a project so did not believe a recommendation of priority to Council was necessary.

Commissioner Hemer moved and Commissioner Edge seconded to recommend approval to City Council for legislative application CPA-2018-001 for the removal of the Scott Park Master Plan from the Comprehensive Plan with the recommended findings as presented. The motion passed unanimously.

Commissioner Edge moved and Commissioner Argo seconded to make a recommendation to City Council that, after completion of the Ledding Library project, the City would pursue an agreement with NCPRD to create a new Scott Park Master Plan.

6.0 Worksession Items — None

7.0 Planning Department Other Business/Updates

8.0 Planning Commission Discussion Items

Commissioner Hemer reminded the group of the Volunteer Appreciation Dinner schedule for March 29th.

The Commission and staff discussed the process for the meeting materials.

9.0 Forecast for Future Meetings:

- | | |
|----------------------|---|
| April 10, 2018 | 1. Public Hearing: CSU-2018-002 Ledding Library Reconstruction |
| April 24, 2018, 2018 | 1. Public Hearing: CSU-2018-001 Milwaukie High School Lake Rd Athletic Fields |
| | 2. Public Hearing: VR-2018-002/ADU-2018-001 10565 SE 23 rd Ave |

Meeting adjourned at approximately 7:03 p.m.

Respectfully submitted,

Alicia Martin, Administrative Specialist II

Kim Travis, Chair



CITY OF MILWAUKIE

PLANNING COMMISSION MINUTES

City Hall Council Chambers
10722 SE Main Street
www.milwaukieoregon.gov

May 22, 2018

Present: Kim Travis, Chair
Adam Argo
Joseph Edge
Sherry Grau
Greg Hemer
Scott Jones

Staff: David Levitan, Senior Planner
Mary Heberling, Assistant Planner
Tim Ramis, City Attorney

Absent: John Henry Burns, Vice Chair

1.0 Call to Order — Procedural Matters*

Chair Travis called the meeting to order at 6:30 p.m. and read the conduct of meeting format into the record.

Note: The information presented constitutes summarized minutes only. The meeting video is available by clicking the Video link at <http://www.milwaukieoregon.gov/meetings>.

2.0 Planning Commission Minutes — None

3.0 Information Items

David Levitan, Senior Planner, noted a Climate Action Fair and Summit was scheduled for the following Thursday, May 31, at the Portland Waldorf School.

4.0 Audience Participation — This is an opportunity for the public to comment on any item not on the agenda. There was none.

5.0 Public Hearings

- 5.1 Summary: 23rd Ave ADU
Applicant/Owner: McCulloch Construction / Dennis Osterlund
Address: 10565 SE 23rd Ave
File: VR-2018-002, ADU-2018-001
Staff: Mary Heberling, Assistant Planner

Chair Travis called the hearing to order and read the conduct of quasi-judicial hearing format into the record.

Mary Heberling, Assistant Planner, presented the staff report via PowerPoint and clarified that the Commission's review was for the Variance Request. She reviewed the site features that included the building was a contributing historic resource in the Comprehensive Plan and the natural resources of Scott Park Pond. The proposal was for a 3-door garage with an Accessory Dwelling Unit (ADU) on the second floor; the variance requests were for a 1,100 sq ft building footprint and for a 20 ft front yard setback.

Ms. Heberling noted the key issues with regard to the scale of the proposed structure and the impacts of the front yard setback to the property to the north.

- The allowed maximum for ADUs was 800 sq ft and the proposal was for 1,100 sq ft as the applicant believed it would be proportionate to the property.
- The proposal included a front porch entryway and staff recommended a walkway from the either the driveway or the street in order to create a better pedestrian element.
- The proposed 20 ft front yard setback was primarily for the benefit of the property to the north as the structure would be directly adjacent to the building to the north if it met the 40 ft setback. Landscape screening would be included and staff recommended that windows of the ADU would be located in the top third of the building for additional privacy screening.

Staff recommended approval of the variance request with the findings and conditions as presented. **Ms. Heberling** reviewed the decision-making options.

Ms. Heberling verified that the setback was required for the ADU. If the property was divided and developed, setbacks would be less and density would be higher.

Chair Travis called for the applicant's testimony.

Dennis Osterlund, 3048 SE Crystal Springs Blvd, Portland OR, stated that he bought the property for his company but needed a garage and saw the opportunity to increase density, which was needed in the area, by including an ADU in the garage construction. The building would match the architecture and style of the 1923 house on the property. **Mr. Osterlund** introduced John McCulloch as the general contractor who had a reputation for high-quality renovations on historic homes.

John McCulloch, McCulloch Construction, 1729 NE Siskiyou St, Portland OR, noted his experience with extensive renovation and restoration of historic homes and research on historic styles. He said the roofline height of the ADU was to match the main structure. For egress, the condition for the upper level window location could not be met.

Mr. Osterlund added that he was excited about the project to restore the main building to its original historic charm and for the new structure to fit nicely with the location.

Chair Travis closed public testimony.

Planning Commission Deliberation

Commissioner Hemer suggested to remove Condition 1d regarding locating the windows in the top third of the building; otherwise, he supported the proposal.

The Commission agreed that the proposal was sensitive to the northern neighbor and fit with the original building well.

Commissioner Hemer moved and Commissioner Edge seconded to approval land use applications VR-2018-002 and ADU-2018-001 for 10565 SE 23rd Ave with the recommended findings and conditions as amended. The motion passed unanimously.

6.0 Worksession Items

- 6.1 Summary: Comprehensive Plan Block 1 Draft Goals and Policies Review

Staff: David Levitan, Senior Planner

David Levitan, Senior Planner, presented the staff report via PowerPoint. The Comprehensive Plan update project was split into goal blocks with sets of topic areas, which then would be pinned down by Council resolution. The Block 1 Policies topics included Public Involvement, Urban Growth Management, Economic Development, and History/Arts/Culture. Once the policies were determined, they would then be reviewed against the quadruple bottom line and for redundancy between policies prior to adoption by ordinance.

Mr. Levitan reviewed the background for the development of the Block 1 Policies with regard to Comprehensive Plan Advisory Committee (CPAC) meetings and a town hall for community feedback on priorities, etc. The next steps included conducting an online survey, holding Planning Commission and City Council worksessions, and a final CPAC meeting for Block 1 prior to the final resolution at Council in July.

Mr. Levitan reviewed and discussed with the Commission proposed policies that were related to the Commission as follows:

Public Involvement:

- A proposed policy was for the Commission to serve as the Community Involvement Advisory Committee which would involve dedicated meetings to address public involvement issues and opportunities. Another public involvement policy outlined better opportunities for input from the Neighborhood District Associations (NDAs) on decisions by the Commission and City Council.
 - **Chair Travis** noted that the Community Involvement Advisory Committee was required by state law and therefore the City was violating Goal 1 by not currently having that entity in place. Many other communities had that committee embedded in the Planning Commission.
 - **Mr. Levitan** stated that that Committee would review how the NDAs were involved in the land use planning process and decision-making, and would evaluate public comments, project outreach, and public meetings held during the year, etc., and then provide guidance on any improvement needed.
 - **Commissioner Edge** noted that Clackamas County had a standalone committee that focused on all matters of public involvement and supported the idea of a similar committee for the city that would review all public engagement outside of only land use.
 - **Ms. Heberling** added that there were other policies within the Public Involvement goal that were overarching for the entire city and formed a roadmap for engagement.
 - **The Commission** agreed that a standalone committee outside of the Commission would be beneficial for the city. The group also discussed involving the industrial and manufacturing areas as currently there were no NDAs in those areas.
 - **Mr. Levitan** clarified that the upcoming joint session with City Council regarding technological change in the city was more focused on land use and transportation as they related to changes such as shared economies, autonomous vehicles, etc. Through this project, it was recognized that the city needed to stay lean and nibble in order to evolve with how the public communicated in the future.

History, Arts, and Culture:

- In the current Comprehensive Plan, historic preservation was part of the natural resources and environmental section as different resources were lumped together into one chapter.

However, through the visioning process and the amount of interest in the History, Arts, and Culture topics, it was determined that a specific chapter for the topic area should be created. One proposed policy was to incentive the provision of spaces for art and gathering places on development sites. This would encourage developers, through the land use planning process, to consider how those elements could enhance benefits for the community.

- **Commissioner Hemer** noted that he was pleased to see both visual and performing arts included in this policy group.
- Although historic preservation was important, some structures were beyond preserving. However, a culture that wanted to protect historic resources was invaluable and a better approach than relying on rules, etc.
- The catch between preserving an older home and its materials and constructing new homes that were more energy efficient, etc., came with complications. Incentives should be for the right outcomes and adjust per situation.
- **Chair Travis** pointed to the proposed policy to ensure that changes to historic resources be consistent with both state and federal criteria as well as the community's priority. This gave the community the opportunity to revisit the processes around those changes.

Urban Growth Management:

- The Urban Growth Management policies called for the city to have a more aggressive approach and to pursue annexations within the urban growth management area (UGMA). However, the majority of the UGMA already had urban services and so there was little ground for the city to require annexation.
 - **Commissioner Hemer** noted that there were many neighboring areas along the boundary of Milwaukie that would consider Milwaukie as their city or neighborhood, such as Oak Grove adjacent to Island Station, or to the east of the Lewelling and Linwood neighborhoods. He encouraged the city to invite the neighboring communities into the NDAs and felt it would be more of a positive strategy.
 - **Mr. Levitan** agreed that the community feeling was what Milwaukie had to offer and neighborhood outreach would be the place to start.
 - **Commissioner Edge** added that the area to the southeast of the city boundary did not have neighborhood representation as the community planning organization was dormant but the area was within the Milwaukie UGMA. Milwaukie had the opportunity to provide incentives to that area to annex and believed policies should be developed around that goal.
 - **Chair Travis** asked that Commissioner Edge attend the next CPAC meeting in her place as she was unable to attend.

Economic Development:

- Proposed policies included language that allowed the city to adapt to industry trends and emerging technologies, to provide flexibility of uses within underutilized industrial areas, and to incentive community amenities in employment areas.
 - **Mr. Levitan** added that a major focus of the project was around creating neighborhood hubs, which the project was receiving feedback from NDAs on currently.
 - The neighborhood hub meetings with the NDAs had been different per NDA with regard to proposals and similar goals of the communities.
 - **Commissioner Hemer** noted the difficulty with the Linwood neighborhood due to the limited natural hubs, limited sidewalks, etc. He added that the neighborhood was frustrated with plans being developed with no actual results; it was detrimental to community engagement. He hoped the neighborhood hubs concept could show results.

- **Chair Travis** agreed with the idea of neighborhood hubs but was unclear how to get to the goal. She noted that there were also other policies that focused on community amenities that would help the city move toward these goals.
- **Commissioner Edge** noted that if neighborhood pubs were a common theme and interest of the community, perhaps land use should be looked at with regard to manufacturing and distribution within residential neighborhoods to allow brewpubs to locate within communities and be economically viable, etc.
- **Mr. Levitan** added that within the downtown mixed-use zone, manufacturing was allowed as long as there was a retail component to the use.
- **Commissioner Edge** added that the concept of "shared economy" uses should be looked at more closely as services such as Lyft and Air BnB were not necessarily "shared." Also, the approval standards for allowing employment through home-based businesses should be crafted carefully.
- **Mr. Levitan** clarified that the purpose of that policy was to expand the employment opportunities within the city as it would be difficult to accommodate the estimated growth due to the lack of available land.

Mr. Levitan asked the Commission to share if there were policies that should be added, deleted, and revised, and ideas around how the Commission could be better involved with the development of Block 2 policies. He agreed to share the final Block 1 policies with the Commission prior to the City Council meeting in July.

7.0 Planning Department Other Business/Updates

~~7.1 Keil Gardens Subdivision Extension Request~~

8.0 Planning Commission Discussion Items

Commissioner Edge updated the Commission on the Design and Landmarks Committee's project to revise the Downtown Design Guidelines. He asked for feedback on if there should be thresholds in place to trigger a Type III review process for development that did not meet the Type II approval criteria; if the deviation from the standard was less than the threshold, it would not require the higher review process.

The Commission discussed the nuances of standards and agreed to send Commissioner Edge their thoughts and ideas.

9.0 Forecast for Future Meetings:

- | | |
|---------------|--|
| June 12, 2018 | 1. Joint Session with City Council: Technological Change in the City |
| June 26, 2018 | 1. Worksession: Comprehensive Plan Update – Block 1 Policy Review |

Meeting adjourned at approximately 8:52 p.m.

Respectfully submitted,

Alicia Martin, Administrative Specialist II

Kim Travis, Chair



CITY OF MILWAUKIE

To: Planning Commission
Through: Dennis Egner, Planning Director
From: Brett Kelter, Associate Planner
Date: September 18, 2018, for September 25, 2018, Public Hearing
Subject: **File:** VR-2018-005 (master file, with NR-2018-002 & DEV-2018-006)
Applicant/Owner: HPA 2, LLC
Applicant's Representative: Cascadia Planning & Development Services
Address: 6115 SE Harmony Rd
Legal Description (Map & Tax Lot): 1S2E31D02200
NDA(s): Linwood

ACTION REQUESTED

Approve application master file #VR-2018-005 and adopt the recommended Findings and Conditions found in Attachments 1 and 2, respectively. This action would allow development of a 15-unit apartment building, with some natural resource disturbance and variances for several development standards.

BACKGROUND INFORMATION

The applicant proposes to build Harmony Park Townhomes, Phase II, a 15-unit apartment building adjacent to the existing Harmony Park Apartments, a 20-unit complex to the west. The site includes a designated natural resource area, which will be disturbed by construction of the proposed new building and associated off-street parking area. The applicant is requesting variances for 3 aspects of the project: (1) front yard setback, (2) side-yard height plane limit, and (3) parking lot landscaping. In addition, the new building is subject to the City's multifamily design standards.

A. Site and Vicinity

The site is comprised of a single, undeveloped property addressed as 6115 SE Harmony Rd. The property is approximately 1.33 acres in size and is bisected by Minthorn Creek and a delineated wetland. The site is accessible from Harmony Rd along its southern

boundary; it is separated from Railroad Ave by an active railroad line along its northern boundary.

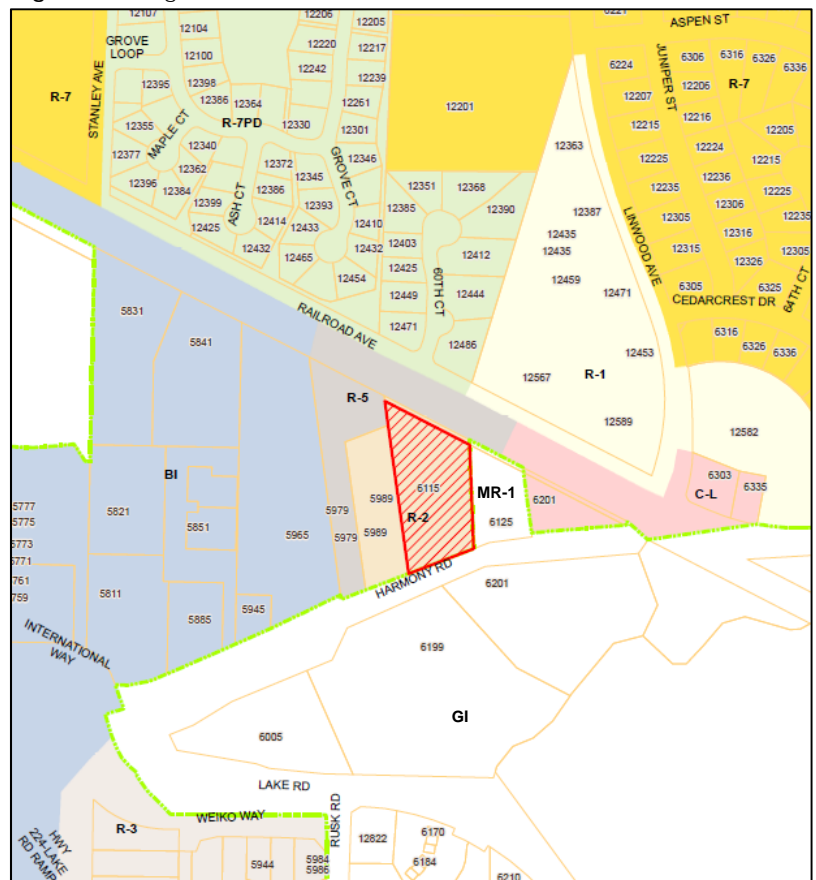
The site annexed into Milwaukie in 2017, though Clackamas County retains jurisdiction of the Harmony Rd right-of-way for maintenance. The immediate area on the north side of Harmony Rd is developed for residential use, with a single-family house adjacent to the east (6125 SE Harmony Rd) and Harmony Park Apartments adjacent to the west (5989 SE Harmony Rd).

Further to the west is the business-industrial area along International Way, including the mini-storage facility approved in 2017 and currently under construction. Beyond the adjacent property to the east, which is under County jurisdiction and zoned Medium Density Residential (MR-1), is a dental office and the intersection of Railroad Ave, Linwood Ave, and Harmony Rd. Across Harmony Rd to the south are light-industrial uses and an electrical substation (zoned General Industrial (GI) by the County. (See Figure 1.)

Figure 1. Vicinity map



Figure 2. Zoning



B. Zoning Designation

Residential R-2 (see Figure 2)

C. Comprehensive Plan Designation

Medium Density (MD)

D. Land Use History

- **May 2017:** File #A-2017-001 – The City Council adopted Ordinance 2149 to annex the subject property as well as the

adjacent apartment property at 5989 SE Harmony Rd.

E. Proposal

The applicant is seeking land use approval for 3 variances, natural resource disturbance, and multifamily design. The proposal is to construct a 15-unit apartment building and associated off-street parking area. See Attachment 4 for the applicant's submittal materials.

The project requires approval of the following applications:

1. Variance Request (file #VR-2018-005, master file) – Variances are requested to (1) reduce the required front yard setback, (2) exceed the side yard height plane limit, and (3) reduce the amount of required parking lot landscaping.
2. Natural Resource review (NR-2018-002) – The proposed development will disturb approximately 10,000 sq ft (total temporary and permanent disturbance) of Water Quality Resource along the south bank of Minthorn Creek.
3. Development Review (DEV-2018-006) – As a multifamily development, the project must demonstrate compliance with the design requirements of MMC Subsection 19.505.3.

KEY ISSUES

Summary

Staff has identified the following key issues for the Planning Commission's deliberation. Aspects of the proposal not listed below are addressed in the Findings (see Attachment 1) and generally require less analysis and discretion by the Commission.

- A. Are the requested variances a necessary and adequate trade-off for reducing disturbance to the natural resource area?
- B. Is the proposed mitigation adequate for the proposed impacts to the WQR?
- C. Is it acceptable to use the mitigation planting area as common open space?
- D. Does the shared garbage/recycling area present an adequately convenient arrangement for all residents?

Analysis

A. Are the requested variances a necessary and adequate trade-off for reducing disturbance to the natural resource area?

The applicant's analysis of alternatives for the requested variances concludes that the proposed configuration is the least impactful to the WQR. Development is proposed south of Minthorn Creek, where the Water Quality Resource (WQR) is more degraded and the community of riparian vegetation is less intact. The applicant is not proposing to bridge the

creek, so the northern WQR will remain undisturbed. However, the effort to concentrate the allowable residential density and required parking and open space presents a significant challenge that warrants a request for relief from several standards.

Front Yard – The subject property has frontage along Harmony Rd, which has a 60-ft right-of-way width. MMC Subsection 19.501.2 requires a special 40-ft setback from the centerline. With 30 ft available from the centerline, this results in a required setback of 10 ft, which is added to the R-2 base zone requirement for a 15-ft front yard setback. The total setback requirement is 25 ft from the edge of the right-of-way.

To limit impacts to the WQR area along the south side of the creek, the applicant has requested a variance to allow a 12-ft setback and proposes to push the building closer to the front lot line, which is angled due to the alignment of Harmony Rd. Since a portion of the rear of the building is within the WQR, shifting it back to meet the front yard setback requirement only increases the amount of WQR disturbance. Reducing the size of the building eliminates dwelling units and causes the development to provide less than the minimum required density.

Given that the nearby intersection of Harmony Rd, Railroad Ave, and Linwood Ave is in need of reconfiguration to improve the level of service, it is quite possible that the 10 ft of additional setback required by MMC 19.501.2 will be necessary for future right-of-way dedication and widening of Harmony Rd. It seems prudent to require at least a 10-ft front yard setback for this purpose. Any future improvements would likely shift the required landscape strip and public sidewalk closer to the new building, which would retain some open space in the reduced setback area, though it is reasonable to require at least a few additional feet of setback for added spacing. The proposed 12-ft front yard setback is a compromise that would maintain some separation of the building from future public improvements in the right-of-way.

Side-Yard Height Plane – The grade on the site drops at the rear of the proposed building, which has the effect of making the eastern building elevation taller near the adjacent property to the east (6125 SE Harmony Rd). However, the adjacent site, which is currently under the County’s jurisdiction and zoned MR-1 for medium residential density, is developed with a single-story house and attached carport. The carport is approximately 12 ft from the common property line and the house is an additional 16 ft away (28 ft total). That arrangement lessens the impact of the proposed massing on the subject property, and the new building’s alignment on the site pulls the rear of the building away from the common property line as the mass increases. The applicant has proposed to retain an existing tree near the rear corner of the new building and to plant an evergreen hedge along a portion of the adjacent property boundary, both of which will provide some buffering of the building mass. If the side yard height plane limit was not varied, the building footprint would have to be expanded in order to meet the minimum required density, which would result in additional permanent impacts to the WQR. The proposed variance is a reasonable trade-off for less WQR disturbance and the impacts can be sufficiently mitigated.

Parking Lot Landscaping – To construct a building large enough to provide the minimum number of dwelling units as well as an off-street parking area that meets the minimum dimensions for parking stalls and drive aisles, the proposed development must use the entire width of the lot. But there is not enough width to meet required building setbacks and landscaping-area widths. Furthermore, the shared access with the apartments to the west and the need to provide an emergency-only access to Harmony Rd result in a drive aisle in the place where the perimeter landscaping should be, adjacent to the public sidewalk. As a result, the proposed parking configuration provides less than the required square footage of interior landscaping (approximately 325 sq ft where 575 sq ft are required).

There is no on-street parking on Harmony Rd and off-street spaces are an important amenity for the site. However, as proposed, a large portion of the new parking area will be without shade, which is also an important long-term effect. It seems reasonable to require the provision of more landscaping to increase shade for the new parking area, even if that might mean replacing a parking space with interior landscaping. Staff recommends a condition requiring the applicant to revise the parking plan in such a way as to provide a total of at least 475 sq ft of interior landscaping, which represents the original area (325 sq ft) plus the approximate area of a standard parking stall (9ft by 18 ft, or roughly 150 sq ft). Whatever adjustments to the parking plan the applicant develops, the additional interior landscaping should be provided without additional impact to the WQR and in the form of at least 2 separate planting areas. This will bring the proposal closer to conformance with the standard and provide additional shade for the parking area.

B. Is the proposed mitigation adequate for the proposed impacts to the WQR?

The proposed development would temporarily disturb approximately 4,365 sq ft of WQR area and would permanently impact approximately 5,650 sq ft of WQR. Areas of temporary disturbance are usually restored on a 1:1 basis; the code does not provide a specific replacement ratio for mitigating permanent impacts. In its review of the applicant's WQR Site Assessment, ESA (the City's on-call natural resources consultant) noted that 1.5:1 is a common replacement ratio for mitigation of permanent disturbance.

For the 5,650-sq-ft permanent WQR disturbance proposed for the new apartment building and associated parking area, such a ratio would require a mitigation area of 8,475 sq ft elsewhere within the WQR. Adding 4,365 sq ft for mitigation of the temporary disturbance would result in a total mitigation area of 12,840 sq ft. As proposed, the mitigation planting area on the south side of Minthorn Creek is only 7,400 sq ft.

Excluding the 4,365 sq ft of temporary WQR disturbance that should be restored anyway, this leaves only 3,035 sq ft of proposed mitigation area for 5,650 sq ft of permanent WQR impacts, which is a replacement ratio of only 0.5:1. Since the existing condition of the WQR area being impacted is categorized as only either "Marginal" or "Poor," and since the intent of mitigation is to restore WQR areas to "Good" conditions, staff believes it is reasonable to suggest that enhancement of temporary impact areas could be counted toward the 1.5:1 replacement mitigation ratio recommended for permanent impacts.

Even with this allowance, however, the proposed 7,400-sq-ft mitigation planting area is less than the 8,475 sq ft recommended for 5,650 sq ft of permanent WQR disturbance alone. Staff has recommended a condition to expand the mitigation area as necessary to achieve a replacement ratio of 1.5:1 for permanent WQR disturbance. This likely will involve installation of mitigation plantings within a portion of the WQR on the north side of Minthorn Creek. Staff believes the recommended mitigation planting area of 8,475 sq ft represents a reasonable and adequate compensation for impacts from the proposed development. The project's direct impacts are limited to the south side of the creek, but some restoration of the north side WQR, where invasive plants can be removed and replaced with native species, will help establish a healthy riparian environment along the creek and wetland over the long term.

C. Is it acceptable to use the mitigation planting area as common open space?

The multifamily design standards require some common open space for recreation, gathering, or as a scenic amenity. The proposal to disturb a portion of the WQR on the south side of Minthorn Creek requires mitigation, and the applicant has proposed to plant native trees and shrubs within an area that will include a walking path, picnic table, and benches. As discussed in the findings for MMC Section 19.402, it is recommended that the alignment of the walking path be revised to remove the loop that was originally proposed and limit the accessible open space to a more linear configuration along the southern boundary of the mitigation planting area. This will reduce the ongoing intrusion into the WQR and allow the establishment of the required mitigation plantings, especially on the slope down to the creek. A split-rail fence and more dense shrub plantings are also recommended along the edge of the walkway, to better distinguish that part of the common open space that is accessible to residents.

Given that the common open space is intended in part to be a scenic amenity, and that user traffic will be focused along the trail and not out into the planting area, the mitigation plantings should remain relatively undisturbed and allow the establishment of a healthy riparian plant community. Residents can use the space for passive recreation and enjoy the larger planting area from the vantage of the walking path, picnic table(s), and benches. The dual-use nature of the common open space should achieve the objectives of both natural resource enhancement and multifamily design.

D. Does the shared garbage/recycling area present an adequately convenient arrangement for all residents?

The proposed configuration of the new parking area does not allow adequate room for a garbage truck to easily access a container and turn around to exit. And the applicant also owns the adjacent apartment complex to the west at 5989 SE Harmony Rd, which includes an existing garbage/recycling facility. So, the proposal for the new apartments to share use of the existing garbage/recycling enclosure makes sense from the perspective of providing easier access for collection vehicles and for not taking up more parking spaces with a second collection area. Rather than physically expanding the existing garbage/recycling facility, the

applicant has proposed to increase the frequency of service from 1 day per week to 2 days per week.

However, the location of the shared facility is at least 250 ft from the entrance of the new building and without a dedicated pedestrian walkway to enhance safety and reduce conflicts with vehicles. Especially during the dark and rainy months, the proposed location is not as convenient as if there were a collection area provided on the site of the new apartments. Staff solicited feedback from the waste hauler (Waste Management) to identify whether a collection area could feasibly be located on the site—no workable option was identified. Another possibility discussed with the applicant was to identify a place within the new building that could serve as a collection area for residents of the building, with a property manager or designee appointed to move materials to the primary collection point on the adjacent apartment site in time for the bi-weekly pickups—the applicant indicated that the logistics that would be involved with such an arrangement were not workable.

The applicant did agree with staff's suggestion to provide a safe route between the new apartment building and the shared collection area. A condition is recommended to require striping a pedestrian walkway within the drive aisle from the new building to the shared collection area. Although this does not solve the problems of inclement weather or darkness, it would improve pedestrian safety for the residents when walking in the shared access drive.

CONCLUSIONS

A. Staff recommendation to the Planning Commission is as follows:

1. Approve the Variance Requests related to (1) front yard setback, (2) side-yard height plane, and (3) parking lot landscaping (master file #VR-2018-005).
2. Approve the Natural Resource review to allow the proposed WQR disturbance (file #NR-2018-002).
3. Approve the Development Review to confirm consistency with the multifamily design guidelines (file #DEV-2018-006).
4. Adopt the attached Findings and Conditions of Approval.

B. Staff recommends the following key Conditions of Approval (see Attachment 2 for the full list of recommended conditions):

1. Expand the mitigation area to reflect a replacement ratio of 1.5:1 for permanent WQR disturbance, with a planting density of 5 trees and 25 shrubs per 500 sq ft of disturbed area.
2. Eliminate the looped aspect of the proposed pedestrian trail to limit encroachment into the WQR density of plantings. Install a split-rail fence along the edge of the adjusted pathway and dense shrub plantings on the downslope to prevent off-trail use and potential damage to the WQR slope. Remove all invasive plants within a 10-ft

buffer outside the boundary of all mitigation planting areas, to improve the chances of mitigation success.

3. Provide a striped pedestrian walkway from the southern end of the new parking area through the shared access drive to the shared garbage/recycling collection facility on the adjacent apartment property to the west.
4. Provide additional interior parking lot landscaping so at least 475 sq ft of interior landscaping is provided in 2 separate planting areas.
5. Demonstrate that a minimum of 15 bicycle parking spaces are located somewhere other than the interior of the dwelling units, with at least half of the spaces covered or enclosed and with all spaces meeting the applicable standards of MMC 19.609.

Additional information regarding development standards and permitting requirements is provided for the applicant's reference in Attachment 3.

CODE AUTHORITY AND DECISION-MAKING PROCESS

The proposal is subject to the following provisions of the Milwaukie Municipal Code (MMC).

- MMC Section 19.302 Medium & High Density Residential Zones (incl. R-2)
- MMC Section 19.402 Natural Resources
- MMC Chapter 19.500 Supplementary Development Regulations (incl. Subsection 19.505.3, Design Standards for Multifamily Housing)
- MMC Chapter 19.600 Off-Street Parking and Loading
- MMC Chapter 19.700 Public Facility Improvements
- MMC Section 19.906 Development Review
- MMC Section 19.911 Variances
- MMC Section 19.1006 Type III Review

This application is subject to Type III review, which requires the Planning Commission to consider whether the applicant has demonstrated compliance with the code sections shown above. In Type III reviews, the Commission assesses the application against review criteria and development standards and evaluates testimony and evidence received at the public hearing.

The Commission has 4 decision-making options as follows:

- A. Approve the application upon finding that all approval criteria have been met, as reflected in the recommended Findings.
- B. Approve the application with modified Findings. Such modifications need to be read into the record.
- C. Deny the application upon finding that it does not meet approval criteria.
- D. Continue the hearing.

The final decision on these applications, which includes any appeals to the City Council, must be made by December 1, 2018, in accordance with the Oregon Revised Statutes and the Milwaukie Zoning Ordinance. The applicant can waive the time period in which the application must be decided.

COMMENTS

Notice of the proposed changes was given to the following agencies and persons: City of Milwaukie Engineering Department, City of Milwaukie Building Department, City of Milwaukie Public Works Department, City of Milwaukie Police Department, Linwood Neighborhood District Association (NDA), Clackamas Fire District #1 (CFD #1), Clackamas County Department of Transportation and Development, Metro, ODOT, TriMet, and North Clackamas School District. The following is a summary of the comments received by the City. See Attachment 7 for further details.

- **Matt Amos, Fire Inspector, CFD #1:** No comments
- **Michelle Wyffels, Planner II, TriMet:** No comments
- **Sarah Hartung, Senior Biologist, ESA (City's on-call natural resources consultant):** Peer review of the applicant's Water Quality Resource Site Assessment was provided in a memo dated September 11, 2018, with a supplemental note provided on September 14, 2018.
- **Hideo Adam Sakuma, Inside Sales Representative, Waste Management:** Provided turning-radius information for collection vehicles.
- **Elise Scolnick, Development Review Planner, ODOT:** Advisory note on potential for noise from traffic and trains, with recommendation for builder to provide mitigation. Advisory note on fencing along northern property boundary adjacent to existing rail line.
- **Ken Kent, Senior Planner, Clackamas County Engineering Division:** Findings and recommended conditions of approval related to public street improvements along the Harmony Rd frontage, which is under the jurisdiction of Clackamas County. Comments have been incorporated into Attachments 1 and 2 where relevant.
- **Richard Shankle, Manager, Crossing Safety Unit, ODOT Rail Division:** Confirmation of Elise Scolnick's advisory comments related to noise and fencing—fencing is recommended, not required.
- **Alex Roller, Engineering Technician II, City of Milwaukie Engineering Department:** The City defers to the County for comments related to required improvements along the Harmony Rd frontage. Additional requirements related to access management and stormwater have been incorporated into Attachment 3.
- **Jesse Tremblay, Land Use Chair, Linwood NDA:** In favor of adding more rental housing to the current supply. Some concerns about potential traffic impacts on the already congested intersection of Harmony Rd, Railroad Ave, and Linwood Ave.

ATTACHMENTS

Attachments are provided as indicated by the checked boxes. All material is available for viewing upon request.

	Early PC Mailing	PC Packet	Public Copies	Packet
1. Recommended Findings in Support of Approval	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2. Recommended Conditions of Approval	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3. Additional Requirements	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4. Applicant's Submittal Materials, stamped received Aug. 3, 2018	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
a. Applicant's Statement (Narrative)				
b. Exhibit 1 – Application Forms				
c. Exhibit 2 – Property Deed				
d. Exhibit 3 – Preapplication Conference Report				
e. Exhibit 4 – Preliminary Development Plans				
f. Exhibit 5 – Preliminary Stormwater Report				
g. Exhibit 6 – Wetland/Waters Delineation Report				
h. Exhibit 7 – DSL Wetland Delineation Concurrence Letter				
i. Exhibit 8 – WQR Site Assessment/Mitigation Plan				
5. Supplemental Materials, stamped received Sept. 5, 2018	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
a. Memo				
b. Revised Plan Sheets				
• Sheet P-4 – Preliminary Site Plan				
• Sheet P-5 – WQR Impacts/Tree Removal				
• Sheet P-6 – Parking/Side Yard/WQR Planting Areas				
• Sheet 3 – Preliminary Grading and ESC Plan				
• Sheet A-1r – Elevations				
6. Additional Updated Plan Sheets, stamped received Sept. 17, 2018	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
a. Sheet P-2 – Existing Conditions Plan				
b. Sheet P-4 – Preliminary Site Plan				
c. Sheet P-5 – WQR Impacts/Tree Removal				
d. Sheet P-6 – Parking/Side Yard/WQR Planting Areas				
e. Sheet A-2 – Floor Plans				
7. Comments Received	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
8. Response to Question from Commissioner Edge (Sept. 14, 2018)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Key:

Early PC Mailing = paper materials provided to Planning Commission at the time of public notice 20 days prior to the hearing.

PC Packet = paper materials provided to Planning Commission 7 days prior to the hearing.

Public Copies = paper copies of the packet available for review at City facilities and at the Planning Commission meeting.

Packet = packet materials available online at <https://www.milwaukieoregon.gov/bc-pc/planning-commission-16>.

**Recommended Findings in Support of Approval
Master File #VR-2018-005—Harmony Park Townhomes, Phase II**

Sections of the Milwaukie Municipal Code not addressed in these findings are found to be inapplicable to the decision on this application.

1. The applicant, HPA 2, LLC, has applied for approval to construct a 15-unit apartment building at 6115 SE Harmony Rd. The proposal includes 3 variance requests related to specific development standards, temporary and permanent disturbance of the designated natural resource area on the site (with accompanying mitigation), and a demonstration of consistency with the multifamily design guidelines. The land use application master file number is VR-2018-005, with NR-2018-002 and DEV-2018-006.
2. The subject property is approximately 1.33 acres in size and is undeveloped. The property is bisected by Minthorn Creek and a delineated wetland, which constitute a Water Quality Resource (WQR). The proposed development, including the apartment building, off-street parking area, and associated walkways and site amenities, will disturb approximately 10,000 sq ft of WQR (combined temporary and permanent disturbance). The applicant has requested variances to the following development standards: (1) front yard setback, (2) side yard height plane limit, and (3) parking lot landscaping. The proposed structure is also subject to the City's design guidelines for multifamily housing.
3. The proposal is subject to the following provisions of the Milwaukie Municipal Code (MMC):
 - MMC Section 19.302 Medium & High Density Residential Zones (incl. R-2)
 - MMC Section 19.402 Natural Resources
 - MMC Chapter 19.500 Supplementary Development Regulations (incl. Subsection 19.505.3, Design Standards for Multifamily Housing)
 - MMC Chapter 19.600 Off-Street Parking and Loading
 - MMC Chapter 19.700 Public Facility Improvements
 - MMC Section 19.906 Development Review (for multifamily design)
 - MMC Section 19.911 Variances
 - MMC Section 19.1006 Type III Review
4. MMC Section 19.1006 Type III Review

The application has been processed and public notice provided in accordance with MMC 19.1006. A public hearing was held on September 25, 2018, as required by law.
5. MMC Section 19.302 Medium & High Density Residential Zones (incl. R-2)

MMC 19.302 establishes standards for the medium- and high-density residential zones, including the R-2 zone. The subject property is zoned R-2.

a. MMC Subsection 19.302.2 Allowed Uses in Medium & High Density Residential Zones

MMC 19.302.2 lists the permitted and conditional uses in the R-2 zone. Multifamily residential uses are permitted outright in the R-2 zone.

The proposed multifamily development is allowed in the R-2 zone.

b. MMC Subsections 19.302.4 and 19.302.5 Development Standards

MMC 19.302.4 and 19.302.5 provide applicable development standards for the R-2 zone, summarized in Table 5-b:

Table 5-b Applicable R-2 Development Standards		
Standard	R-2 Requirement	Proposed Development
Front Yard	15 ft (not including special setback for Harmony Rd)	12 ft (See Finding 11 for discussion of requested variance from this standard.)
Side Yard	5 ft	5 ft and >50 ft
Rear Yard	15 ft	>180 ft
Maximum Building Height Height Exceptions (MMC 19.302.5.E)	3 stories or 45 ft (lesser of) Plus 1 additional story if an additional 10% of site area is retained in vegetation	4 stories, approx. 35 ft (including daylight basement) (Minimum vegetation is >60%, which allows an additional story.)
Side Yard Height Plane Limit (w/ slope of plane at 45 degrees)	25 ft	35 ft (See Finding 11 for discussion of requested variance from this standard.)
Maximum lot coverage	45%	<11%
Minimum vegetation (>50% of vegetation area must be suitable for outdoor recreation by residents)	15% (for 58,000-sq-ft site, at least 4,350 sq ft must be suitable for outdoor recreation)	>60% (See Finding 7-e for discussion of multifamily common open space.)
Density requirements	Min. = 15 units (@11.6 units/acre) Max = 23 units (@17.4 units/acre)	15 units
Front Yard Minimum Vegetation	40% (may provide less if vehicle turnaround area is needed onto collector or arterial street)	Approx. 41% (Front yard includes parking & maneuvering area for turnaround onto Harmony Rd, an arterial street)
Minimum site size for multifamily development	40,000 sq ft (5,000 sq ft for first unit; 2,500 sq ft/unit for additional units)	Approx. 58,000 sq ft

The Planning Commission finds that, as noted in the table above and per the requested variances addressed in Finding 11, the applicable development standards of the R-2 zone are met.

The Planning Commission finds that as proposed, and with approval of the relevant variance requests addressed in Finding 11, the development meets all applicable standards of MMC 19.302 for the underlying R-2 zone.

6. MMC Section 19.402 Natural Resources

MMC 19.402 establishes regulations for designated natural resource areas. The standards and requirements of MMC 19.402 are an acknowledgment that many of the riparian, wildlife, and wetland resources in the community have been adversely impacted by development over time. The regulations are intended to minimize additional negative impacts and to restore and improve natural resources where possible.

a. MMC Subsection 19.402.3 Applicability

MMC 19.402.3 establishes applicability of the Natural Resource (NR) regulations, including all properties containing Water Quality Resources (WQRs) and Habitat Conservation Areas (HCAs) as shown on the City's Natural Resource (NR) Administrative Map.

Minthorn Creek flows west to east across the middle of the subject property, and a small delineated wetland (approximately 0.12 acres) extends along the north side of the creek. The City's NR Administrative Map does not show any WQR designations on the subject property, but natural resources that meet the WQR parameters established in MMC Table 19.402.15 are considered to be WQR features and are subject to the regulations of MMC 19.402.

As presented in the applicant's submittal materials, the proposed development will temporarily disturb approximately 4,350 sq ft of WQR area and permanently disturb approximately 2,700 sq ft of WQR area, for a total of almost 7,100 sq ft. At that scale, the proposed activity is not listed as exempt according to the standards outlined in MMC 19.402.4.

The Planning Commission finds that the requirements of MMC 19.402 are applicable to the proposed activity.

b. MMC Subsection 19.402.7 Activities Requiring Type II Review

MMC 19.402.7 establishes that certain activities within a designated WQR and/or HCA are subject to Type II review in accordance with MMC 19.1005. As per MMC 19.402.7.E, this includes boundary verifications that propose substantial corrections to the NR Administrative Map, including identifying the precise location of wetlands, as required by MMC 19.402.15.A.

Although the applicant did not propose a correction to the NR Administrative Map, which showed no WQR or HCA designations on the subject property, the applicant's submittal materials identify primary protected water features in the form of Minthorn Creek and an

adjacent delineated wetland. A Type II boundary verification is required to properly show these WQR features on the NR Administrative Map. Since the proposed activity requires other applications that are being processed concurrently with Type III review, the boundary verification will be incorporated into that higher review as per MMC Subsection 19.1001.6.B.1, which provides that concurrent applications be processed according to the highest numbered review type, with a single decision to be issued that includes findings for all concurrent applications.

The Planning Commission finds that the necessary boundary verification for WQR features shall be processed concurrently with Type III review.

c. MMC Subsection 19.402.8 Activities Requiring Type III Review

MMC 19.402.8 establishes that certain activities within a designated WQR and/or HCA are subject to Type III review in accordance with MMC 19.1006. As per MMC 19.402.8.A.1, this includes activities allowed in the base zone that are not otherwise exempt or permitted as a Type I or II activity.

The scale of disturbance proposed within the identified WQR area on the subject property exceeds the levels allowed by Type I and II review, as provided in MMC 19.402.6 and 402.7, respectively. As such, the activity is subject to Type III review and the discretionary process established in MMC 19.402.12.

The Planning Commission finds that the proposed activity is subject to Type III review.

d. MMC Subsection 19.402.9 Construction Management Plans

MMC 19.402.9 establishes standards for construction management plans, which are required for projects that disturb more than 150 sq ft of designated natural resource area. Construction management plans must provide information related to site access, staging of materials and equipment, and measures for tree protection and erosion control.

The applicant's submittal materials include a preliminary grading and erosion control plan that provides the information required by MMC 19.402.9 and effectively serves as a construction management plan. As discussed in Finding 5-e, below, a condition has been established to require revisions to the plans to reflect actual WQR disturbance and tree removal, and the construction management plan will be adjusted accordingly.

As conditioned, the Planning Commission finds that the construction management plan provides sufficient information for natural resource protection.

e. MMC Subsection 19.402.11 Development Standards

MMC 19.402.11 establishes development standards for projects that impact a designated natural resource, including requirements to protect natural resource areas during development and general standards for required mitigation (e.g., plant species, size, spacing, and diversity).

In particular, Subsection 11-C establishes mitigation requirements for disturbance within WQRs. The requirements vary depending on the existing condition of the WQR, according to the categories established in MMC Table 19.402.11.C. For Class A "Good" WQR conditions, the table requires that the applicant submit a plan for mitigating water quality impacts related to the development; for Class B "Marginal" and Class C "Poor" WQR conditions, the table requires restoration and mitigation with native species using a City-approved plan.

As proposed, the development will permanently impact approximately 5,650 sq ft and temporarily disturb approximately 4,365 sq ft within the WQR. Based on existing conditions, the portion of the WQR on the south side of Minthorn Creek is categorized as Class B ("Marginal") and Class C ("Poor"). For both categories, the code requires restoration and mitigation with native species using a City-approved plan. The applicant has proposed to plant an area of approximately 7,400 sq ft on the south side of Minthorn Creek with native trees, shrubs, and ground cover. As proposed, the mitigation plantings will meet the minimum requirements established in Subsection 11-B.

ESA, the City's consultant for on-call natural resource services, evaluated the applicant's WQR Site Assessment and made several recommendations to ensure adequate mitigation. One suggestion was to increase the replacement ratio for permanently impacted WQR from the proposed 1.25:1 to 1.5:1 or 2:1. That is, for every 1 sq ft of WQR that will be permanently disturbed by development, 1.5 or 2 sq ft of area within the remaining WQR should be treated with mitigation measures. ESA also noted some discrepancies between the applicant's revised plan sheets and the WQR Site Assessment that need to be reconciled with respect to the number and species of plantings proposed within the mitigation area. In addition, the density of proposed plantings is well under the standard recommended ratio of 5 trees and 25 shrubs per 500 sq ft of disturbance. ESA recommended a different planting scheme within the proposed looped pathway through the common open space, installation of a split-rail fence to demarcate the remaining protected WQR, and correction of an apparent mapping error that currently shows grading below the ordinary high water line in one location. As per the discussion in Finding 6-f, below, conditions have been established to implement ESA's recommendations by requiring revisions to the relevant plan sheets to provide appropriate protection of the WQR and adequate mitigation for the proposed disturbance.

As conditioned, the Planning Commission finds that the applicable development standards of MMC 19.402.11 are met.

f. MMC Subsection 19.402.12 General Discretionary Review

MMC 19.402.12 establishes the discretionary review process for activities that substantially disturb designated natural resource areas.

(1) MMC Subsection 19.402.12.A Impact Evaluation and Analysis

MMC 19.402.12.A requires an impact evaluation and alternatives analysis in order to determine compliance with the approval criteria for discretionary review and to evaluate alternatives to the proposed development. A technical

report prepared by a qualified natural resource professional is required and should include the following components:

- Identification of ecological functions
- Inventory of vegetation
- Assessment of water quality impacts
- Alternatives analysis
- Demonstration that no practicable alternative method or design exists that would have a lesser impact on the resource and that impacts are mitigated to the extent practicable
- Mitigation plan

The applicant's submittal materials include a WQR Site Assessment, a technical report prepared by SWCA Environmental Consultants. SWCA is a nationwide environmental consulting firm providing a range of services, including natural resource assessment and mitigation. The WQR Site Assessment includes an assessment of ecological functions, inventory of vegetation and impact evaluation consistent with the required components listed above. The report also provides a mitigation plan for permanent and temporary impacts to the WQR.

The applicant's narrative discusses 3 alternatives to the proposed development configuration: (1) locating the apartment building in the southwest corner of the site, the parking area in the southeast corner of the site, and providing direct access from Harmony Rd; (2) locating the building in the southwest corner of the site, parking in the southeast corner, and extending the shared access driveway across the front of the site; and (3) providing access from Railroad Ave to the north and bridging the creek to access the southern portion of the site. The applicant's narrative concludes that the proposed development is the most practicable alternative that results in the least impact to the natural resources on the site.

ESA's peer review of the applicant's materials includes a note that the alternatives analysis did not provide estimates of potential WQR impacts for the various alternatives and did not address the possibility of reducing the footprint of off-street parking by locating some or all spaces beneath the proposed building. Staff notes that other alternatives for consideration include (1) further reducing the front yard setback to reduce WQR disturbance and (2) requesting a variance to exceed the maximum allowed building height to create a smaller footprint with a 4- or 5-story structure.

While acknowledging the points raised by ESA and staff, the Planning Commission finds that the applicant's materials provide a sufficient amount of information for evaluating alternatives and reviewing the proposed activity against the approval criteria of Subsection 12-B. This standard is met.

(2) MMC Subsection 19.402.12.B Approval Criteria

MMC 19.402.12.B provides the approval criteria for discretionary review as follows:

- **Avoid** – The proposed activity avoids the intrusion of development into the WQR and/or HCA to the extent practicable, and has less detrimental impact to the natural resource areas than other practicable alternatives.

The subject property has a number of significant constraints, with Minthorn Creek and the adjacent wetland bisecting the site, an active railway line along the northern boundary, and Harmony Rd along the southern boundary with limited access as an arterial street. The southern half of the site is the most reasonable location for development, but given the extent of the WQR boundary there, it is difficult to configure a site plan that provides a building large enough to meet the minimum density requirement as well as the associated required parking without some WQR disturbance and/or a host of variances from other code standards.

- **Minimize** – If the applicant demonstrates that there is no practicable alternative to avoid disturbance of the natural resource, then the proposed activity shall minimize detrimental impacts to the extent practicable.

It is not reasonable or practicable to require the applicant to provide most or all of the required parking under the building, as the construction costs would appear to be prohibitive. Switching the building and parking locations would not result in any significant difference in disturbance. A building with a smaller footprint would need to be at least 1 or 2 stories taller, which significantly increases the complexity and cost of construction, in addition to presenting issues of building mass and compatibility with adjacent properties.

As per the discussion in Finding 11, the requested front yard setback of 12 ft strikes a reasonable balance between pulling the new building away from the WQR while maintaining some space for a potential future widening of Harmony Rd. However, ESA provided recommendations aimed at further reducing impacts to the WQR. These include revising the grading plan to clarify that no grading will occur below the ordinary high water line and eliminating the looped aspect of the proposed pedestrian trail to limit encroachment into the WQR. Conditions have been established to incorporate these recommendations for minimizing impacts.

- **Mitigate** – If the applicant demonstrates that there is no practicable alternative that will avoid disturbance of the natural resource, then the proposed activity shall mitigate for adverse impacts to the resource area. The applicant shall present a mitigation plan that demonstrates compensation for detrimental impacts to ecological functions, with mitigation occurring on the site of the disturbance to the extent practicable, utilization of native plants, and a maintenance plan to ensure the success of plantings.

As noted in Finding 6-e, above, the applicant's submittal includes a mitigation plan for the proposed WQR disturbance, with native trees, shrubs, and ground cover planted within an approximately 7,400-sq-ft area on the south side of Minthorn Creek. The plan presents a rationale for the selection of various species

based on the site conditions and emphasizes the importance of removing invasive plants within the mitigation area. The proposal estimates a temporary WQR disturbance of approximately 4,365 sq ft and permanent WQR impacts of approximately 5,650 sq ft.

According to ESA's review of the applicant's original WQR Site Assessment, the WQR boundary along the south side of Minthorn Creek was not originally calculated accurately where the slope of the bank exceeds 25%. The WQR actually extends farther south where the new building is proposed, with the result that a larger area of the WQR will be permanently disturbed than was understood at the time of the application submittal. A condition has been established to require revisions to the mitigation plan to account for this additional permanent disturbance. ESA also noted that the proposed picnic table and benches should be considered permanent disturbance and accounted for accordingly.

As noted earlier in Finding 6-e, ESA reported that a replacement ratio of 1.5:1 is a common mitigation requirement for permanent impacts to WQR areas. For the proposed permanent WQR disturbance of 5,650 sq ft, such a ratio would require a mitigation area of 8,475 sq ft elsewhere within the WQR. Temporary disturbances are usually mitigated on a 1:1 basis, so an additional 4,365 sq ft would be added to the mitigation tally, for a total of 12,840 sq ft.

As proposed, the mitigation planting area on the south side of Minthorn Creek is only 7,400 sq ft. Excluding the 4,365 sq ft of temporary WQR disturbance that should be restored anyway, this leaves only 3,035 sq ft of proposed mitigation area for 5,650 sq ft of permanent WQR impacts, which is a replacement ratio of only 0.5:1. Since the existing condition of the WQR area being impacted is categorized as only either "Marginal" or "Poor," and since the intent of mitigation is to restore WQR areas to "Good" conditions, it is reasonable to suggest that enhancement of temporary impact areas could be counted toward the 1.5:1 replacement mitigation ratio recommended for permanent impacts. Even with this allowance, the proposed 7,400-sq-ft mitigation planting area is less than the 8,475 sq ft recommended for 5,650 sq ft of permanent WQR disturbance alone. A condition has been established to expand the mitigation area as necessary to achieve a replacement ratio of 1.5:1 for permanent WQR disturbance, including installation of mitigation plantings in the WQR on the north side of Minthorn Creek as necessary.

As proposed, the number of mitigation plantings is well below the ratio of 5 trees and 25 shrubs per 500 sq ft of disturbed area. This is the planting density recommended in MMC Subsection 19.402.11.D.2 for HCAs and is understood to be a reasonable planting density for WQR areas as well. A condition has been established to require this planting density within the entire mitigation area, with more detail about what native species will be used where. Plant species shall be selected based on their appropriateness for specific site conditions (e.g., if below the ordinary high water line, within the delineated wetland, in upland areas, etc.).

ESA noted that the mitigation plan does not explain how temporary grading impacts within the WQR will be restored, nor does it provide much discussion of potential stormwater impacts to the creek. Although the plan emphasizes the removal of invasive plants within the mitigation area itself, ESA has recommended that invasive plants be removed within a 10-ft buffer outside the boundary of all mitigation planting areas, to improve the chances of mitigation success. ESA also recommended the installation of a split-rail fence along the edge of the adjusted pathway and dense shrub plantings on the downslope to prevent off-trail use and potential damage to the WQR slope. Conditions have been established to address these issues and incorporate ESA's recommendations, including a requirement for boosted plantings and ground cover below the proposed stormwater outfall to prevent erosion.

With the revisions required by the established conditions of approval, the proposed mitigation will adequately compensate for detrimental impacts to ecological functions resulting from the temporary and permanent disturbance of the WQR.

As conditioned, the Planning Commission finds that the proposed development meets the approval criteria for discretionary review as established in MMC 19.402.12.B.

The Planning Commission finds that, as conditioned, the proposed development meets the applicable discretionary review standards of MMC 19.402.12.

g. MMC Subsection 19.402.15 Boundary Verification and Map Administration

MMC 19.402.15 establishes standards for verifying WQR and HCA boundaries and for administering the City's Natural Resource (NR) Administrative Map.

WQR locations are determined based on the provisions of MMC Table 19.402.15. For streams, the WQR includes the feature itself and a vegetated corridor that extends 50 ft from the ordinary high water mark or 2-year recurrence interval flood elevation. Where the slope exceeds 25% for less than 150 ft, the vegetated corridor is measured with a 50-ft width from the break in the 25% slope. For wetlands, a wetland delineation report prepared by a professional wetland specialist and approved by the Department of State Lands (DSL) is required.

For HCAs, the City's NR Administrative Map is assumed to be accurate with respect to location unless challenged by the applicant, using the procedures outlined in either MMC Subsection 19.402.15.A.1 or MMC Subsection 19.402.15.A.2.b.

The WQR Site Assessment prepared by SWCA includes a detailed topographic map showing the boundaries of the WQR using the provisions of MMC Table 19.402.15. In addition, the submittal materials include a wetland delineation report prepared in accordance with DSL standards as well as a formal letter of concurrence by DSL.

As noted in Finding 6-f, above, according to ESA's review, the WQR boundary along the south side of Minthorn Creek that was presented in the applicant's original submittal materials was not accurately calculated where the slope of the bank exceeds 25%. The result is that the WQR extends farther south where the new building is proposed. A condition has been

established to require revisions to the mitigation plan and other relevant plan sheets to reflect the correct WQR boundary, so the City's NR Administrative Map can be updated to show the correct location of the designated natural resources on the subject property.

The NR Administrative Map does not show any HCA on the subject property. The applicant is not challenging the map's accuracy with respect to the HCA designation and the City does not have the authority to initiate a detailed HCA as part of this land use application. The NR Administrative Map will continue to show no HCA designation on the subject property.

As conditioned, the Planning Commission finds that the City's NR Administrative Map will be adjusted to reflect the accurate location of the WQR on the site, based on the detailed information provided by the applicant with respect to the delineated wetland and the ordinary high water line and adjacent slopes along Minthorn Creek.

The Planning Commission finds that, as conditioned, the proposed development, including disturbance of the designated natural resource area on the subject property, meets all applicable standards of MMC 19.402.

7. MMC Chapter 19.500 Supplementary Development Regulations

MMC 19.500 provides additional standards for a variety of development types and locations. The applicable portions of this section are addressed below.

a. MMC Subsection 19.501.2 Yard Exceptions

MMC Subsection 19.501.2.A requires additional building setbacks from the centerline of several streets in the city, including Harmony Rd, which requires an additional yard area of 40 ft from centerline plus the applicable yard requirement.

The right-of-way width along the subject property's Harmony Rd frontage is 60 ft, or 30 ft in each direction from the centerline. For the proposed development, an additional building setback of 10 ft is required, added on to the 15-ft front yard setback required in the R-2 zone. The applicant has requested a variance from these combined setbacks and has proposed a building setback of 12 ft. A discussion of this variance request is provided in Finding 11.

With the approved variance request as discussed in Finding 11, this standard is met.

b. MMC Subsection 19.504.1 Clear Vision Areas

MMC 19.504.1 refers to clear vision area requirements in MMC Chapter 12.24.

The proposal will not have any negative impact on the current vision clearance conditions along Harmony Rd because no new access is proposed and the only significant landscaping changes along this frontage involve the removal of vegetation.

As proposed, the applicable clear vision requirements are met.

c. MMC Subsection 19.504.7 Minimum Vegetation

MMC 19.504.7 requires that no more than 20% of the required vegetation area may be covered with bark mulch.

As proposed, over half the subject property will be vegetated, including mitigation plantings consisting of native species trees, shrubs, and ground cover. Very little of the vegetation areas on the site will be covered with bark mulch.

This standard is met.

d. MMC Subsection 19.504.9 On-Site Circulation and Walkways

MMC 19.504.9 is applicable to all development subject to MMC Chapter 19.700, except single-family and multifamily residential development.

This subsection is not applicable to the proposed multifamily residential development.

e. MMC Subsection 19.505.3 Multifamily Housing

MMC 19.505.3 establishes design standards for multifamily housing, to facilitate the development of attractive housing that encourages multimodal transportation and good site and building design. The requirements of this subsection are intended to achieve the principles of livability, compatibility, safety and functionality, and sustainability. The design elements, established in MMC Subsection 19.505.3.D, are applicable to all new multifamily housing developments with 3 or more units.

MMC Subsection 19.505.3.C provides both an objective and a discretionary review process for multifamily housing development, requiring either Type I or Type II development review, respectively, pursuant to MMC Section 19.906. However, a project can be reviewed using only one of the two review processes and may not use some of the objective standards and some of the discretionary guidelines in one application.

The proposed 15-unit multifamily housing development is subject to review against the design elements established in MMC 19.505.3. Because the proposed design does not meet all of the clear and objective design standards, the applicant has opted to use the discretionary Type II review process to demonstrate the proposal's consistency with the design guidelines, summarized in Table 7-e:

Table 7-e
Design Guidelines—Multifamily Housing

Design Element	Guideline	Findings
<p>1. Private Open Space</p>	<p>The development should provide private open space for each dwelling unit, with direct access from the dwelling unit and visually and/or physically separate from common areas.</p> <p>The development may provide common open space in lieu of private open space if the common open space is well designed, adequately sized, and functionally similar to private open space.</p>	<p>Fourteen (14) of the 15 proposed units each have a private patio or balcony at least 85 sq ft in size. In lieu of a private open space for the 1 studio apartment, the proposed development includes a common open space area with a walking path, picnic table, and benches. This common open space is designed to protect the WQR mitigation area while providing an opportunity for residents to walk, sit, or passively recreate outside.</p> <p>The proposed design is consistent with this guideline.</p>
<p>2. Public Open Space</p>	<p>The development should provide sufficient open space for the purpose of outdoor recreation, scenic amenity, or shared outdoor space for people to gather.</p>	<p>The design includes a common open space approximately 7,650 sq ft in area. The open space is almost entirely within the WQR along the south side of Minthorn Creek and includes the mitigation planting area, along with a walking path, picnic table, and benches. Although much of this open space is only visually available to users (in order to protect the WQR and mitigation plantings), it does provide an important scenic amenity and a place for people gather in some fashion.</p> <p>The proposed design is consistent with this guideline.</p>
<p>3. Pedestrian Circulation</p>	<p>Site design should promote safe, direct, and usable pedestrian facilities and connections throughout the development. Ground-floor units should provide a clear transition from the public realm to the private dwellings.</p>	<p>Sidewalks and walkways are shown throughout the development to provide access between buildings, open space, parking, and the street. As discussed below in the finding for Design Element 10 (Recycling), a condition has been established to require the striping of a pedestrian walkway in the shared accessway to connect the new building with the shared garbage/recycling facility on the adjacent apartment property to the west.</p> <p>A clear transition from the public realm to the ground-floor units by locating unit entrances within the building lobby, providing a railing around private open space areas, and locating landscaping areas between walkways and the front of the building.</p> <p>The proposed design is consistent with this guideline.</p>

Table 7-e
Design Guidelines—Multifamily Housing

Design Element	Guideline	Findings
<p>4. Vehicle and Bicycle Parking</p>	<p>Vehicle parking should be integrated into the site in a manner that does not detract from the design of the building, the street frontage, or the site. Bicycle parking should be secure, sheltered, and conveniently located.</p>	<p>To minimize impacts to the WQR, the on-site parking area is located to the side of the proposed development and not between the building and Harmony Rd, with access provided through a shared drive off to the side. The original proposal was to designate a bicycle parking area inside each unit, which would be secure and sheltered. However, as discussed in Finding 8-e, to ensure that the required bicycle parking is conveniently located, a condition has been established to require the provision of bicycle parking somewhere other than the interior of each unit, with at least half of the spaces covered or enclosed and with all spaces meeting the applicable standards of MMC Section 19.609. As conditioned, the proposed design is consistent with this guideline.</p>
<p>5. Building Orientation and Entrances</p>	<p>Buildings should be located with the principal façade oriented to the street or a street-facing open space such as a courtyard. Building entrances should be well-defined and protect people from the elements.</p>	<p>The primary building entrance faces Harmony Rd, and the 85-ft width of the front façade is more than 50% of the 164-ft lot width. The primary ground-floor entrance is emphasized between 2 columns and leads into a lobby area that protects all unit entrances from the elements. The proposed design is consistent with this guideline.</p>
<p>6. Building Façade Design</p>	<p>Changes in wall planes, layering, horizontal & vertical datums, building materials, color, and/or fenestration should be incorporated to create simple and visually interesting buildings Windows and doors should be designed to create depth and shadows and to emphasize wall thickness and give expression to residential buildings. Windows should be used to provide articulation to the façade and visibility into the street. Building facades should be compatible with adjacent building facades. Garage doors shall be integrated into the design of the larger façade in terms of color, scale, materials, and building style.</p>	<p>The building elevations show a variety of trim elements and changes in materials to highlight the building entrance, demarcate the different floors, and provide overall visual interest. Windows and doors are inset within trim to provide depth, shadows, and expression. The windows on the front façade provide articulation and allow visibility to the street. The general design has some similarity to the recently constructed apartment building adjacent to the west. The door of the attached garage is oriented to face the side of the parking area and will be painted a color to match the rest of the building. The proposed design is consistent with this guideline.</p>

Table 7-e
Design Guidelines—Multifamily Housing

Design Element	Guideline	Findings
<p>7. Building Materials</p>	<p>Buildings should be constructed with architectural materials that provide a sense of permanence and high quality, incorporating a hierarchy of building materials that are durable.</p> <p>Street-facing facades should consist predominantly of a simple palette of long-lasting materials such as brick, stone, stucco, wood siding, and wood shingles.</p> <p>Split-faced block and gypsum reinforced fiber concrete (for trim elements) should only be used in limited quantities.</p> <p>Fencing should be durable, maintainable, and attractive.</p>	<p>The design utilizes durable materials to provide a sense of permanence and quality, including Hardi Board lap siding and paneling, with corner trim and architectural comp shingles. A stone veneer that was originally proposed has been removed and replaced with a simple, clean panel. A high-quality black metal fencing has been proposed to replace the chain-link fencing that was part of the original submittal.</p> <p>The proposed design is consistent with this guideline.</p>
<p>8. Landscaping</p>	<p>Landscaping should be used to provide a canopy for open spaces and courtyards, and to buffer the development from adjacent properties. Existing, healthy trees should be preserved whenever possible. Landscape strategies that conserve water should be included.</p> <p>Hardscapes should be shaded where possible, as a means of reducing energy costs (heat island effect) and improving stormwater management.</p>	<p>The planting area for mitigation of WQR impacts, which also serves as the common open space, will be planted with native trees and shrubs sufficient to provide canopy coverage for well over 33% of the open space. Unfortunately, the location of the few existing trees within the project area prevents the preservation of most of them, due to conflicts with the building footprint or parking area. New trees along the western perimeter of the parking area will provide some shade, and as discussed in Finding 11-c, a condition has been established to require the provision of additional interior landscaping to shade the parking area.</p> <p>As conditioned, the proposed design is consistent with this guideline.</p>
<p>9. Screening</p>	<p>Mechanical equipment, garbage collection areas, and other site equipment and utilities should be screened so they are not visible from the street and public or private open spaces. Screening should be visually compatible with other architectural elements in the development.</p>	<p>As proposed, all mechanical and communications equipment will be screened from the street, private open space areas, and the common open space. The new building will share the existing garbage/recycling facility on the adjacent apartment property to the west, which is enclosed by a sight-obscuring fence.</p> <p>The proposed design is consistent with this guideline.</p>

Table 7-e
Design Guidelines—Multifamily Housing

Design Element	Guideline	Findings
<p>10. Recycling Areas</p>	<p>Recycling areas should be appropriately sized to accommodate the amount of recyclable materials generated by residents. Areas should be located such that they provide convenient access for residents and for waste/recycling haulers. Recycling areas located outdoors should be appropriately screened or located so they are not prominent features viewed from the street.</p>	<p>Due to the constrained parking and maneuvering area, which does not provide adequate turnaround room for a collection vehicle, the new apartment building will share the existing garbage/recycling facility on the adjacent apartment property to the west. The applicant has proposed to increase the frequency of collection from once a week to twice a week to accommodate the anticipated increase in volume. In consideration of the considerable walking distance from the new building to the shared garbage/recycling facility and the need to ensure pedestrian safety, a condition has been established to require that a striped pedestrian walkway be established from the southern end of the new parking area through the shared access drive to the shared garbage/recycling collection.</p> <p>As conditioned, the proposed design is consistent with this guideline.</p>
<p>11. Sustainability</p>	<p>Development should optimize energy efficiency by designing for building orientation for passive heat gain, shading, day-lighting, and natural ventilation. Sustainable materials, particularly those with recycled content, should be used whenever possible. Sustainable architectural elements should be incorporated to increase occupant health and maximize a building's positive impact on the environment.</p> <p>When appropriate to the context, buildings should be placed on the site giving consideration to optimum solar orientation. Methods for providing summer shading for south-facing walls, and the implementation of photovoltaic systems on the south-facing area of the roof, are to be considered.</p>	<p>Although solar panels are not proposed at this time, the proposed roof design does not preclude the installation of solar panels in the future. The building has been oriented to provide as much solar exposure as possible. The proposed windows within the units will be operable, and sun shades will be provided.</p> <p>The proposed design is consistent with this guideline.</p>

Table 7-e
Design Guidelines—Multifamily Housing

Design Element	Guideline	Findings
12. Privacy Considerations	Development should consider the privacy of, and sight lines to, adjacent residential properties, and should be oriented and/or screened to maximize the privacy of surrounding residences.	There are no residential structures within 30 ft of the new building. The proposed patios and balconies are not oriented toward either of the adjacent properties on either side of the subject property. The landscaping proposed along the western perimeter of the parking area and along the rear of the east side of the building will provide additional screening and privacy for the adjacent residential properties. The proposed design is consistent with this guideline.
13. Safety	Development should be designed to maximize visual surveillance, create defensible spaces, and define access to and from the site. Lighting should be provided that is adequate for safety and surveillance, while not imposing lighting impacts to nearby properties. The site should be generally consistent with the principles of Crime Prevention Through Environmental Design (CPTED): <ul style="list-style-type: none"> • Natural Surveillance • Natural Access Control • Territorial Reinforcement 	The building elevations and floor plans demonstrate consistency with CPTED principles. The placement and frequency of windows on all sides of the building will allow views of the public sidewalk, parking lot, and common open space area. The locations of fencing and walkways will naturally control access to and from the site. Parking lot lighting and attached building lighting will enhance safety and surveillance. The proposed design is consistent with this guideline.

The Planning Commission finds that, as conditioned, the proposed development is consistent with the design guidelines for multifamily housing as established in MMC 19.505.3.

As proposed and conditioned, the Planning Commission finds that the applicable standards of MMC 19.500 are met.

8. MMC Chapter 19.600 Off-Street Parking and Loading

MMC 19.600 regulates off-street parking and loading areas on private property outside the public right-of-way. The purpose of these requirements includes providing adequate space for off-street parking, minimizing parking impacts to adjacent properties, and minimizing environmental impacts of parking areas.

a. MMC Section 19.602 Applicability

MMC 19.602 establishes the applicability of the provisions of MMC 19.600, and MMC Subsection 19.602.3 establishes thresholds for full compliance with the standards of MMC 19.600. Development of a vacant site is required to provide off-street parking and loading areas that conform fully to the requirements of MMC 19.600.

The proposed development includes construction of a 15-unit apartment building and associated off-street parking, which is required to conform fully to the requirements of MMC 19.600.

The Planning Commission finds that the provisions of MMC 19.600 are applicable to the proposed development as discussed above.

b. MMC Section 19.605 Vehicle Parking Quantity Requirements

MMC 19.605 establishes standards to ensure that development provides adequate vehicle parking based on estimated parking demand. The section establishes processes for modification and determination of parking requirements, exemptions and reductions to the required ratios, and provisions for shared parking.

(1) MMC Subsection 19.605.1 Minimum and Maximum Requirements

MMC Table 19.605.1 provides minimum and maximum quantity requirements for multifamily dwellings containing 3 or more dwelling units. Minimum requirements are based on the size of the units: those with 800 sq ft of floor area or less require at least 1 space per unit, and those with more than 800 sq ft of floor area require at least 1.25 spaces per unit. The maximum allowance is 2 spaces per unit, regardless of unit size. As per Subsection 1-D, where the calculation of minimum parking spaces does not result in a whole number, the result is rounded down to the next whole number; where the calculation of maximum parking does not result in a whole number, the result is rounded to the nearest whole number.

One studio apartment and three 1-bedroom apartments are proposed with less than 800 sq ft of floor area each, requiring a minimum of 4 off-street parking spaces. Eleven 2-bedroom units are proposed with more than 800 sq ft of floor area each, requiring a minimum of 13 spaces (rounding down from 13.75 as per Subsection 1-D). A minimum total of 17 spaces are required; a maximum total of 30 spaces are allowed.

The proposed development includes 21 regular parking spaces, 1 ADA parking space, and 1 loading space, for a total of 23 spaces.

(2) MMC Subsection 19.605.3 Exemptions and By-Right Reductions to Quantity Requirements

MMC 19.605.3 establishes certain exemptions and reductions to the quantity requirements of MMC 19.605.1, including reductions for proximity to public transit. Specifically for multifamily uses, Subsection 3-B-2(b) allows required parking to be reduced by up to 20% if the development is within 500-ft walking distance of a transit stop with a peak hour service frequency of 30 minutes or less.

The applicant has not requested any by-right reduction to parking quantity and has in fact proposed to provide more than the minimum number of required spaces, as noted in

Finding 9-b(1), above. The subject property is not close enough to a transit stop to qualify for a by-right reduction to parking quantity requirements.

The Planning Commission finds that the off-street parking area proposed as part of the proposed development meets the vehicle parking quantity requirements of MMC 19.605.

c. MMC Section 19.606 Parking Area Design and Landscaping

MMC 19.606 establishes standards for parking area design and landscaping, to ensure that off-street parking areas are safe, environmentally sound, and aesthetically pleasing, and that they have efficient circulation.

(1) MMC Subsection 19.606.1 Parking Space and Aisle Dimension

MMC 19.606.1 establishes dimensional standards for required off-street parking spaces and drive aisles. For 90°-angle spaces, the minimum width is 9 ft and minimum depth is 18 ft, with a 9-ft minimum curb length and 22-ft drive aisles. Parallel spaces require with 22-ft lengths and a width of 8.5 ft.

The applicant has submitted a parking plan that satisfies these dimensional standards.

(2) MMC Subsection 19.606.2 Landscaping

MMC 19.606.2 establishes standards for parking lot landscaping, including for perimeter and interior areas. The purpose of these landscaping standards is to provide buffering between parking areas and adjacent properties, break up large expanses of paved area, help delineate between parking spaces and drive aisles, and provide environmental benefits such as stormwater management, carbon dioxide absorption, and a reduction of the urban heat island effect.

(a) MMC Subsection 19.606.2.C Perimeter Landscaping

In all but the downtown zones, perimeter landscaping areas must be at least 6 ft wide where abutting other properties and at least 8 ft wide where abutting the public right-of-way. At least 1 tree must be planted for every 40 lineal ft of landscaped buffer area, with the remainder of the buffer planted with grass, shrubs, ground cover, mulch, or other landscaped treatment. Parking areas adjacent to residential uses must provide a continuous visual screen from 1 to 4 ft above the ground to adequately screen vehicle lights.

Perimeter landscaping is required along the western and southern boundaries of the proposed parking area, though site constraints make it difficult to meet the applicable standards. The configuration of the shared access driveway from the adjacent property to the west, as well as the location of a gated access from Harmony Rd for emergency vehicles, intrude into the area where perimeter landscaping would otherwise provide an 8-ft-wide buffer from the Harmony Rd right-of-way.

The new apartment building, which is sized to meet the minimum density requirement of the underlying zone, is located at the minimum 5-ft setback along the eastern property line to maximize the developable portion of the subject property. The adjacent off-street parking area, which provides 2 rows of 90°-angle stalls separated by a drive aisle, is sized to meet the minimum dimensional requirements and to preserve as much of the required 6-ft-wide perimeter landscaping area as possible. However, the proposed site configuration leaves only approximately 3.5 ft as the landscaping buffer along the western perimeter.

The applicant has requested a variance from the parking lot landscaping standards, including from the standards for perimeter landscaping. The variance request is discussed in Finding 11, which provides findings and establishes conditions for approval.

The applicant's submittal does not include planting details for the proposed perimeter landscaping areas, but it acknowledges that sufficient detail will be provided as part of the building permit review process. An existing 6-ft chain link fence with sight-obscuring slats runs along the common property boundary at the western edge of the parking area, and it is assumed that the applicant controls the fence, as the owner of the adjacent property to the west. A condition has been established to ensure that the applicable perimeter landscaping and screening standards are met.

As conditioned, and as per the variance request discussed in Finding 11, this standard is met.

(b) MMC Subsection 19.606.2.D Interior Landscaping

At least 25 sq ft of interior landscaped area are required for each parking space. Planting areas must be at least 120 sq ft in area, at least 6 ft in width, and dispersed throughout the parking area. For landscape islands, at least 1 tree shall be planted per island, with the remainder of the buffer planted with grass, shrubs, ground cover, mulch, or other landscaped treatment.

The proposed development includes 21 standard parking spaces, 1 ADA space, and 1 loading space. For the total of 23 spaces, a minimum of 575 sq ft of interior landscaping is required. As proposed, the site plan provides approximately 325 sq ft of interior landscaping, so the applicant has requested a variance from this standard. The variance request is discussed in Finding 11 and has been approved, though with a condition requiring revisions to the plans to provide a minimum of 475 sq ft of interior landscaping, with no additional WQR disturbance and with at least 2 separate planting areas.

As per the variance request discussed in Finding 11 and as conditioned, this standard is met.

(c) MMC Subsection 19.606.2.E Other Parking and Landscaping Provisions

Preservation of existing trees in off-street parking areas is encouraged and may be credited toward the total number of trees required. Parking area landscaping must be installed prior to final inspection, unless a performance bond is posted with the City. Required landscaping areas may serve as stormwater management facilities, and pedestrian walkways are allowed within landscape buffers if the buffer is at least 2 ft wider than required by MMC 19.606.2.C and 19.606.2.D.

The plans submitted show that 4 existing trees will be removed because they are either directly within the parking lot footprint or would have their critical root zones damaged by construction. Proper and complete installation of landscaping will be confirmed as part of the subsequent Development Review and final inspection. No pedestrian walkways or stormwater facilities are proposed within the parking lot landscaping.

This standard is met.

As conditioned, and as per the variance request discussed in Finding 11, the Planning Commission finds that the applicable standards of MMC 19.606.2 are met.

(3) MMC Subsection 19.606.3 Additional Design Standards

MMC 19.606.3 establishes various design standards, including requirements related to paving and striping, wheel stops, pedestrian access, internal circulation, and lighting.

(a) MMC Subsection 19.606.3.A Paving and Striping

Paving and striping are required for all required maneuvering and standing areas, with a durable and dust-free hard surface and striping to delineate spaces and directional markings for driveways and accessways.

The plans submitted indicate that all parking areas will be paved and striped.

This standard is met.

(b) MMC Subsection 19.606.3.B Wheel Stops

Parking bumpers or wheel stops are required to prevent vehicles from encroaching onto public rights-of-way, adjacent landscaped areas, or pedestrian walkways. Curbing may substitute for wheel stops if vehicles will not encroach into the minimum required width for landscape or pedestrian areas.

The plans submitted indicate that wheel stops will be installed to prevent vehicles from encroaching into pedestrian walkways and perimeter landscaping areas.

This standard is met.

(c) MMC Subsection 19.606.3.C Site Access and Drive Aisles

Accessways to parking areas shall be the minimum number necessary to provide access without inhibiting safe circulation on the street. Drive aisles shall meet the dimensional requirements of MMC 19.606.1, including a 22-ft minimum width for drive aisles serving 90°-angle stalls and a 16-ft minimum width for drive aisles not abutting a parking space. Along collector and arterial streets, no parking space shall be located such that its maneuvering area is in an ingress or egress aisle within 20 ft of the back of the sidewalk. Driveways and on-site circulation shall be designed so that vehicles enter the right-of-way in a forward motion.

The proposed development will take access from Harmony Rd through a shared driveway on the adjacent apartment property to the west. The proposed drive aisles meet the minimum applicable dimensional requirements. Although 2 of the parking spaces are located with their maneuvering areas in the drive aisle within 20 ft of the back of sidewalk along Harmony Rd, the parking area will be separated from the sidewalk by a metal fence and gate for emergency access. The parking lot's design, together with the shared driveway arrangement, will effectively require vehicles to enter the right-of-way in a forward motion.

This standard is met.

(d) MMC Subsection 19.606.3.D Pedestrian Access and Circulation

Pedestrian access shall be provided so that no off-street parking space is farther than 100 ft away, measured along vehicle drive aisles, from a building entrance or a walkway that is continuous, leads to a building entrance, and meets the design standards of MMC Subsection 19.504.9.E.

As proposed, no off-street parking space is farther than 100 ft away from a building entrance or walkway that meets the standards of this subsection.

This standard is met.

(e) MMC Subsection 19.606.3.E Internal Circulation

The Planning Director has the authority to review the pedestrian, bicycle, and vehicular circulation of the site and impose conditions to ensure safe and efficient on-site circulation. Such conditions may include, but are not limited to, on-site signage, pavement markings, addition or modification of curbs, and modification of drive aisle dimensions.

The Planning Director has reviewed the plans and concluded that, given the proposal to have the new building share the existing garbage/recycling collection facility on the adjacent apartment property to the west, an additional improvement is necessary to promote pedestrian safety. A condition has been established to require that a striped pedestrian walkway be established from the southern end of

the new parking area through the shared access drive to the shared garbage/recycling collection facility.

As conditioned, this standard is met.

(f) MMC Subsection 19.606.3.F Lighting

Lighting is required for parking areas with more than 10 spaces and must have a cutoff angle of 90° or greater to ensure that lighting is directed toward the parking surface. Lighting shall not cause a light trespass of more than 0.5 footcandles measured vertically at the boundaries of the site and shall provide a minimum illumination of 0.5 footcandles for pedestrian walkways in off-street parking areas.

The applicant's submittal does not include planting lighting details for the parking area, but it acknowledges that sufficient detail will be provided as part of the building permit review process. A condition has been established to ensure that this standard is met.

As conditioned, this standard is met.

As conditioned, the Planning Commission finds that the applicable standards of MMC 19.606.3 are met.

As conditioned, the Planning Commission finds that the applicable design and landscaping standards of MMC 19.606 are met.

d. MMC Section 19.608 Loading

MMC 19.608 establishes standards for off-street loading areas and empowers the Planning Director to determine whether loading spaces are required. For development with fewer than 50 dwelling units on a site that abuts a local street, no loading space is required; otherwise, 1 space is required. Loading spaces shall be at least 35 ft long and 10 ft wide, with a height clearance of 13 ft, and located where not a hindrance to drive aisles or walkways.

The proposed parking lot design includes 1 designated loading space measuring 10 ft wide and 35-ft long. The loading space is situated with no height obstructions and is located alongside the rear of the new building, where it will not hinder drive aisles or walkways.

The Planning Commission finds that this standard is met.

e. MMC Section 19.609 Bicycle Parking

MMC 19.609 establishes standards for bicycle parking for new development of various uses, including multifamily housing. For multifamily development with 4 or more units, MMC Subsection 19.609.2 requires a minimum of 1 bicycle parking space per unit, with at least 50% of the spaces covered and/or enclosed (in lockers or a secure room). MMC Subsection 19.609.3.A provides that each bicycle parking space shall have minimum dimensions of 2 ft by 6 ft, with 5-ft-wide aisles for maneuvering.

MMC Subsection 19.609.4 requires bike racks to be located within 50 ft of a main building entrance.

For the proposed 15-unit multifamily housing development, a minimum of 15 bicycle parking spaces is required, with 8 of them covered or enclosed. The applicant has proposed to designate an area within each unit for bicycle parking, in addition to 5 spaces in the covered area outside the units on the first floor and 1 space in the covered area outside the units in the daylight basement. However, the proposal for designated spaces within each unit presents a number of difficulties, including conflicts with interior furnishings (especially in wet weather conditions) and the challenge of carrying a bicycle up to and down from the 2nd or 3rd floor.

A more reasonable bicycle parking scenario could include spaces available in the open corridor on the ground-floor level, with additional spaces in the landings of the other floors as needed. Another option could be to utilize a portion of the attached garage for secure bicycle parking. Or there may be a location(s) outside the building near a pedestrian walkway where a bicycle rack could be installed for use by residents or visitors. A condition has been established to require revisions to the relevant plan sheets to demonstrate that a minimum of 15 bicycle parking spaces are located somewhere other than the interior of the dwelling units, with at least 8 of the spaces covered or enclosed and with all spaces meeting the applicable standards of MMC 19.609.

As conditioned, the Planning Commission finds that this standard is met.

f. MMC Section 19.610 Carpool and Vanpool Parking

MMC 19.610 establishes carpool parking standards for new industrial, institutional, and commercial development.

The proposed development is for multifamily housing. This standard is not applicable.

As conditioned, and as per the variance request discussed in Finding 11, the Planning Commission finds that the proposed development meets all applicable standards MMC 19.600 for off-street parking.

9. MMC Chapter 19.700 Public Facility Improvements

MMC 19.700 is intended to ensure that development, including redevelopment, provides public facilities that are safe, convenient, and adequate in rough proportion to their public facility impacts.

a. MMC Section 19.702 Applicability

MMC 19.702 establishes the applicability of the provisions of MMC 19.700, including new construction.

The applicant proposes to develop multifamily housing on a vacant site. The proposed new construction triggers the requirements of MMC 19.700.

b. MMC Section 19.703 Review Process

MMC 19.703 establishes the review process for development that is subject to MMC 19.700, including requiring a preapplication conference, establishing the type of application required, and providing approval criteria.

The applicant had a preapplication conference with City staff on November 2, 2017, prior to application submittal. The proposed development does not trigger a Transportation Impact Study (as addressed in Finding 9-c). The proposal's compliance with MMC 19.700 has been evaluated as part of the concurrent review of variance requests, natural resource disturbance, and multifamily design standards. Finding 9-f addresses the proposal's compliance with the approval criteria established in MMC Subsection 19.703.3, particularly the required transportation facility improvements.

c. MMC Section 19.704 Transportation Impact Evaluation

MMC 19.704 establishes the process and requirements for evaluating development impacts on the surrounding transportation system, including determining when a formal Transportation Impact Study (TIS) is necessary and what mitigation measures will be required.

The subject property is zoned for medium residential density and no new direct access to the site from its frontage on Harmony Rd, an arterial street, is proposed. Therefore, the Engineering Director has determined that a formal TIS is not required.

d. MMC Section 19.707 Agency Notification and Coordinated Review

MMC 19.707 establishes provisions for coordinating land use application review with other agencies that may have some interest in a project that is in proximity to facilities they manage.

The application was referred to the Oregon Department of Transportation (ODOT), Clackamas County Department of Transportation and Development (DTD), TriMet, and Metro for comment. The section of Harmony Rd fronting the subject property is under the jurisdiction of Clackamas County. The County has regulatory authority where transportation impacts and improvement standards are concerned, and the County DTD provided comments that have been incorporated into these findings and the associated conditions of approval.

e. MMC Section 19.708 Transportation Facility Requirements

MMC 19.708 establishes the City's requirements and standards for improvements to public streets, including pedestrian, bicycle, and transit facilities. However, the subject property's public street frontage is along Harmony Rd, which is currently under the jurisdiction of Clackamas County. Where the City has more restrictive standards than the County for certain elements, it is the City's practice to defer to the County standards when the proposed development demonstrates that there is no practicable alternative and that the proposal presents the minimum exception necessary to provide a safe and functional design. Such situations are evaluated at the time of development permit review.

Note: If the City annexes the Harmony Rd right-of-way along the subject property's frontage and takes jurisdiction of the road for maintenance prior to the proposed development acquiring the necessary development permits, the applicable City standards from MMC Chapter 19.700 (Public Facility Improvements), MMC Title 12 (Streets, Sidewalks, and Public Places), and the City Public Works Standards will take precedence over the following requirements set forth for County road access approval and frontage improvements.

The following findings provided by the County DTD address the County's requirements for such elements as access management, clear vision, street design, and bicycle and pedestrian facilities; and provide the principal basis for related conditions of approval.

- (1) *The applicant has proposed construction of a 15-unit multifamily development on the north side of Harmony Rd. Harmony Rd is a major arterial roadway under the jurisdiction of Clackamas County.*
- (2) *Clackamas County has adopted roadway standards that pertain to the structural section, construction characteristics, minimum required right-of-way widths and access standards for major arterial roadways. Development applications are required to improve one half of the street cross section along the entire site frontage.*
- (3) *Based on access and driveway spacing standards, a shared access has been required for the properties along this portion of Harmony Rd. Access to the project site will be provided through a shared access with the property to the west to an existing driveway approach onto Harmony Rd.*
- (4) *Minimum frontage improvements on the Harmony Rd frontage include, but are not necessarily limited to, up to a half-street improvement, maintaining the existing curb off-set, and storm drainage facilities. In addition, standard curb or curb and gutter when curb line slope is less than 1%, a minimum 6-ft-wide unobstructed sidewalk behind a minimum 5-ft-wide landscape strip with street trees.*
- (5) *The applicant shall comply with County Roadway Standards clear zone requirements in accordance with Roadway Standards Section 245 along the entire Harmony Rd site frontage.*

Conditions have been established in response to these County findings, to ensure that the proposed development will meet all applicable standards of MMC 19.708, the Clackamas County Roadway Standards, and any other applicable County requirements.

As conditioned, the Planning Commission finds that the proposed development meets the applicable public facility improvement standards of MMC 19.700.

10. MMC Section 19.906 Development Review

MMC 19.906 establishes a review process to ensure that new development complies with the applicable standards and provisions of the City's land use regulations. As per MMC Subsection 19.505.3.C, multifamily housing development is required to utilize the

development review process established in MMC 19.906 to evaluate consistency with the design elements for multifamily housing provided in MMC Subsection 19.505.3.D.

MMC Subsection 19.906.4 establishes the approval criteria for development review applications, which include compliance with all applicable standards from MMC Chapters 19.300, 19.400, 19.500, 19.600, and 19.700. In addition, a proposal must show compliance with all applicable conditions of any land use approval for the proposal issued prior to or concurrent with the development review application.

The review of the proposal's consistency with the multifamily housing design elements is presented in Finding 8-e. The proposed development's compliance with all applicable chapters of Title 19 Zoning is presented in this larger documentation of findings. Since the proposal is for new development on the previously undeveloped subject property there are no prior land use approvals, and the proposed development is subject to all conditions established as part of the current land use review.

The Planning Commission finds that the proposed development has appropriately utilized the discretionary development review process to confirm the proposal's consistency with the multifamily housing design guidelines as discussed in Finding 8-e.

11. MMC Section 19.911 Variances

MMC Section 19.911 establishes the variance process for seeking relief from specific code sections that have the unintended effect of preventing reasonable development or imposing undue hardship.

a. MMC Subsection 19.911.2 Applicability

MMC 19.911.2 establishes applicability standards for variance requests.

Variances may be requested to any standard of MMC Title 19, provided the request is not specifically listed as ineligible in MMC Subsection 19.911.2.B. Ineligible variances include requests that result in any of the following: change of a review type, change or omission of a procedural step, change to a definition, increase in density, allowance of a building code violation, allowance of a use that is not allowed in the base zone, or the elimination of restrictions on uses or development that contain the word "prohibited."

The applicant has requested 3 variances: (1) to reduce the front yard setback, (2) to exceed the side yard height plane limit, and (3) to reduce the dimension and amount of required parking lot landscaping.

The applicant has proposed a front yard setback of 12 ft where 25 ft is required by combining the R-2 standard with the requirement of MMC Subsection 19.501.2 for an additional setback from Harmony Rd (discussed in Finding 7-a). The applicant has proposed a building height of 35 ft at the minimum side yard depth, where the R-2 zone sets the side yard height plane limit at 25 ft. And the applicant has proposed to reduce or eliminate the width of the required perimeter parking lot landscaping area and to reduce the area of interior parking lot landscaping provided.

The requested variances meet the eligibility requirements.

b. MMC Subsection 19.911.3 Review Process

MMC 19.911.3 establishes review processes for different types of variances. Subsection 3-B establishes the Type II review process for limited variations to certain numerical standards. Subsection 3-C establishes the Type III review process for larger or more complex variations to standards that require additional discretion and warrant a public hearing.

MMC 19.911.3.B allows up to a 25% reduction in the required front yard setback. As noted in Finding 11-a, above, the applicant has proposed a front yard setback of 12 ft where 25 ft would be required. The request to vary the standard by 13 ft is more than the 25% allowance for Type II review. The variance requests for side yard height plane limit and parking lot landscaping are also not eligible for Type II variance review. Therefore, the requested variances are subject to the Type III review process and must address the approval criteria established in MMC Subsection 19.911.4.B.

c. MMC Subsection 19.911.4 Approval Criteria

MMC 19.911.4 establishes approval criteria for variance requests. Specifically, MMC Subsection 19.911.4.B.1 provides the following approval criteria for Type III variances where the applicant elects to utilize the Discretionary Relief Criteria:

- (1) The applicant's alternatives analysis provides, at a minimum, an analysis of the impacts and benefits of the variance proposal as compared to the baseline code requirements.

Front Yard Setback: The applicant's narrative notes the impacts of shifting the building to meet the 25-ft setback, including additional permanent impacts to the WQR. The area of permanent disturbance would be shifted closer to Minthorn Creek, and the building would intrude into an area of >25% slopes near the ordinary high water line. This would also reduce the width of the vegetated buffer area between the building and the creek. Reducing the front yard setback as proposed would avoid those impacts to the WQR, while maintain a building footprint that is adequately sized for enough dwelling units to meet the minimum density standard.

Side Yard Height Plane Limit: The applicant's narrative and supplemental materials discuss the benefits of allowing the east elevation of the building to exceed the side yard height plane limit, which include allowing construction of a daylight basement and maintaining a smaller building footprint to minimize WQR impacts and still provide enough units to meet the minimum density standard. The applicant notes that the adjacent property to the east is developed with a carport and single-family house that are 20 ft and 36 ft, respectively, from the nearest point of the proposed new apartment building. Complying with the side yard height plane limit would impact the number of units provided and/or would require a larger building footprint and thus more disturbance to the WQR.

Parking Lot Landscaping: The applicant's narrative and supplemental materials discuss the benefits of reducing the width of the required landscaping area along the western and southern perimeters of the parking lot and reducing the area of interior landscaping provided. Reducing the perimeter width allows the development of a parking area that meets the dimensional requirements for spaces and drive aisles with room for a building footprint sized to provide units that meet the minimum required density. The variance also allows room for the construction of a retaining wall that reduces the amount of grading necessary in the WQR.

Reducing the required landscaping width along the southern perimeter, on both the subject property and on the adjacent property to the west (5939 SE Harmony Rd), allows use of a shared access from Harmony Rd. This reduces the need for additional variances or exemptions related to proposing direct access and avoids creating operational or safety issues on an arterial street.

The Planning Commission finds that the applicant's submittal provides an adequate analysis of the impacts and benefits of the requested variances compared to the baseline requirements. This criterion is met.

- (2) The proposed variance is determined to be both reasonable and appropriate, and it meets one or more of the following criteria:
 - (a) The proposed variance avoids or minimizes impacts to surrounding properties.
 - (b) The proposed variance has desirable public benefits.
 - (c) The proposed variance responds to the existing built or natural environment in a creative and sensitive manner.

Front Yard Setback: The requested variance is reasonable and represents a sensitive response to the existing natural environment by minimizing the permanent impacts to the WQR close to Minthorn Creek, keeping the building farther from the >25% slopes near the ordinary high water line, and providing a wider vegetated buffer area between the building and the creek. The variance also allows the applicant to construct a building sized adequately for meeting the minimum density standard for the site, which is important given the City's focus on facilitating the development of more housing units.

In addition, maintaining a 12-ft front yard setback as proposed leaves the nearest point of the building at least 23 ft from the curb on Harmony Rd, taking into consideration the improved 6-ft-wide sidewalk and 5-ft-wide landscape strip required by Clackamas County (see Finding 9). Due to the angled nature of the Harmony Rd right-of-way, only the southeastern corner of the building will be within 12 ft of the front property line, as the rest of the front façade pulls away from Harmony Rd moving east to west. The City's Engineering Department has indicated that the additional 10 ft needed to provide 40 ft from centerline (as discussed in Finding 7-a) is sufficient for future anticipated improvements on Harmony Rd. If a 10-ft right-of-way dedication is required in the

future, there will still be at least 2 ft between the nearest point of the building and any public improvements.

Side Yard Height Plane Limit: The topography of the subject property drops from the front to the rear of the proposed new building. This presents the applicant with a choice to either step down the height at the rear or shift the building footprint farther from the minimum yard setback on the east side, if the height plane standard is to be met. The requested variance reasonably allows the applicant to minimize impacts on the WQR area while still developing enough units to meet the minimum density standard. In addition, the distance of existing structures on the adjacent property to the east from the new building provides a buffer that can be augmented with vegetated screening as proposed.

Parking Lot Landscaping: The physical constraints of the site are considerable, with Minthorn Creek and the adjacent delineated wetland cutting off access to the northern half of the property and covering much of the southern half with the WQR designation as a protected natural resource. The applicant has developed a site plan that responds to the existing natural environment with a building that provides the minimum required number of units as well as an associated off-street parking area with slightly more than the minimum number of required spaces.

Given that Harmony Rd is an arterial street without on-street parking, it is reasonable that the proposed parking area would be sized to provide more than the minimum number of spaces. The site layout represents an appropriate effort to reduce impacts to the WQR. The western perimeter landscaping area remains wide enough for tree planting as required, which will provide some screening from the adjacent apartment property. And the applicant has proposed a 42-in metal fence and gate along the southern perimeter to eliminate conflicts between the parking area and adjacent public sidewalk.

The Planning Commission finds that the requested variances are reasonable and appropriate and that each meets one or more of the criteria provided in MMC Subsection 19.911.B.1.b.

- (3) Impacts from the proposed variance will be mitigated to the extent practicable.

Front Yard Setback: The primary result from a reduction in the front yard setback is that the units on the front side of the building will be closer to Harmony Rd. Traffic noise and a reduction in privacy are likely to result. Landscaping would provide some mitigation for these impacts, though a future widening of Harmony Rd would likely require removal of most landscaping in front of the building. The applicant has proposed to plant street trees within the landscape strip required along the Harmony Rd frontage as required, so visual screening will be provided that will also help dampen noise. No additional mitigation is deemed practicable or necessary.

Side Yard Height Plane Limit: As proposed, the additional massing presented by the proposed new building is mitigated in a couple of ways. The carport on the adjacent

property is 20 ft from the nearest point of the proposed new building. It acts as a buffer for the single-family house it is attached to, which is an additional 16 ft away. In addition, the applicant has proposed to retain the 1 significant existing tree between the new building and the eastern property line and to plant an evergreen hedge along the rear half of the new building, where the impact of the massing is greatest. These factors present adequate mitigation for the impacts of the requested variance.

Parking Lot Landscaping: Despite the request to reduce perimeter width and interior area, the applicant has proposed to plant all parking lot landscaping areas as required by MMC Subsection 19.606.2. While this satisfies some of the purpose of the parking lot landscaping standards, it would leave a large portion of the parking area unshaded and exposed to the heat-island effect.

The applicant has proposed to provide only approximately 325 sq ft of interior landscaped area where a minimum of 575 sq ft are required. Although there is no on-street parking on Harmony Rd and off-street spaces are an important amenity for the site, providing more shade for the new parking area is important enough to warrant the potential replacement of a parking space (approximately 150 sq ft) with interior landscaping. A condition has been established to require that the applicant revise the parking plan in such a way as to provide a total of at least 475 sq ft of interior landscaping, without additional impact to the WQR and with at least 2 separate planting areas, to bring the proposal closer to conformance with the standard and provide additional shade for the parking area.

The Planning Commission finds that the requested variances for front yard setback and side yard height plane limit will not result in any impacts that require further mitigation. As conditioned, the Planning Commission finds that impacts from the requested parking lot landscaping variance will be sufficiently mitigated.

As conditioned, the Planning Commission finds that the requested variances meet the approval criteria established in MMC 19.911.4.B.1 for Type III variances seeking discretionary relief.

The Planning Commission finds that, as conditioned, the requested variances are allowable as per the applicable standards of MMC 19.911.

12. The application was referred to the following departments and agencies on August 16, 2018:

- Milwaukie Engineering Department
- Milwaukie Building Department
- Milwaukie Public Works Department
- Milwaukie Police Department
- Linwood Neighborhood District Association (NDA) Chairperson and Land Use Committee (LUC)
- Clackamas Fire District #1

- Clackamas County Department of Transportation & Development
- Metro
- ODOT
- TriMet
- North Clackamas School District

The comments received are summarized as follows:

- **Matt Amos, Fire Inspector, CFD #1:** No comments
- **Michelle Wyffels, Planner II, TriMet:** No comments
- **Sarah Hartung, Senior Biologist, ESA (City's on-call natural resources consultant):** Peer review of the applicant's Water Quality Resource Site Assessment was provided in a memo dated September 11, 2018, with a supplemental note provided on September 14, 2018.
- **Hideo Adam Sakuma, Inside Sales Representative, Waste Management:** Provided turning-radius information for collection vehicles.
- **Elise Scolnick, Development Review Planner, ODOT:** Advisory note on potential for noise from traffic and trains, with recommendation for builder to provide mitigation. Advisory note on fencing along northern property boundary adjacent to existing rail line.
- **Ken Kent, Senior Planner, Clackamas County Engineering Division:** Provided findings and recommended conditions of approval related to public street improvements along the Harmony Rd frontage, which is under the jurisdiction of Clackamas County.
- **Richard Shankle, Manager, Crossing Safety Unit, ODOT Rail Division:** Confirmation of Elise Scolnick's advisory comments related to noise and fencing—fencing is recommended, not required.
- **Alex Roller, Engineering Technician II, City of Milwaukie Engineering Department:** The City defers to the County for comments related to required improvements along the Harmony Rd frontage. Provided additional requirements related to access management and stormwater.
- **Jesse Tremblay, Land Use Chair, Linwood NDA:** In favor of adding more rental housing to the current supply. Some concerns about potential traffic impacts on the already congested intersection of Harmony Rd, Railroad Ave, and Linwood Ave.

Recommended Conditions of Approval
Master File #VR-2018-005—Harmony Park Townhomes, Phase II

1. At the time of submittal of the associated development permit application(s), the following shall be resolved:
 - a. Final plans submitted for development permit review shall be in substantial conformance with the plans approved by this action, which are the plans stamped received by the City on August 3, 2018; and with amended materials stamped received by the City on September 5, 2018, and September 17, 2018; except as otherwise modified by these conditions of approval.
 - b. The modifications required by these conditions of approval include the following revisions to all relevant plan sheets:
 - (1) As per Finding 6-g, accurately show the Water Quality Resource (WQR) boundary, particularly where slopes exceed 25% on the south side of Minthorn Creek.
 - (2) As per Finding 6-f, make the following revisions to the mitigation plan and related plan sheets:
 - (a) Recalculate the area of required mitigation planting based on permanent disturbance of the WQR, using a replacement ratio of 1.5:1. (Note that the area occupied by features such as picnic tables and benches shall be considered permanent disturbance.) Identify the adjusted mitigation planting area(s) within the WQR, including on the north side of Minthorn Creek if necessary.
 - (b) Revise the mitigation planting list to reflect a planting density of 5 trees and 25 shrubs per 500 sq ft of disturbance area, in addition to ground cover. Provide more detail about which species will be used where, selecting plant species based on their appropriateness for specific site conditions (e.g., if below ordinary high water line, within the delineated wetland, in upland areas, etc.). Provide enhanced plantings and ground cover below the stormwater outfall to prevent erosion.
 - (c) Revise the alignment of the decomposed granite walkway within the common open space and mitigation planting area, removing the looped configuration and providing a more linear alignment along the southern boundary of the mitigation planting area (closer to the building and parking area) that limits encroachment into the WQR. Install a split-rail fence along the edge of the adjusted walkway and dense shrub plantings on the downslope to prevent off-trail use and potential damage to the WQR slope.

- (3) As per Finding 7-e, provide a striped pedestrian walkway from the southern end of the new parking area through the shared access drive to the shared garbage/recycling collection facility on the adjacent apartment property to the west.
 - (4) As per Finding 8-c, make the following revisions to the plans related to the off-street parking area:
 - (a) Provide a detailed parking lot landscaping plan, sufficient to demonstrate compliance with the standards of MMC Subsection 19.606.2.C. This includes confirmation that the necessary visual screening from the adjacent residential building will be provided.
 - (b) Provide a total of 475 sq ft of interior parking lot landscaping with no additional WQR disturbance and with at least 2 separate planting areas, as per the variance discussed in Finding 11.
 - (c) Demonstrate that the parking area lighting will meet the standards of MMC Subsection 19.606.3.F, while limiting light spill into the WQR as per MMC Subsection 19.402.11.
 - (5) As per Finding 8-e, demonstrate that a minimum of 15 bicycle parking spaces are located somewhere other than the interior of the dwelling units, with at least half of the spaces covered or enclosed and with all spaces meeting the applicable standards of MMC 19.609.
- c. Provide a narrative describing all actions taken to comply with these conditions of approval. In addition, describe any changes made after the issuance of this land use decision that are not related to these conditions of approval.
2. As per Finding 9-f, the following items are project requirements from the Development Engineering Division of the Clackamas County Department of Transportation and Development (DTD).

Although the County does not have land use jurisdiction over the proposed development, the County does have jurisdiction over access and improvements along Harmony Rd. The following recommended conditions reflect the County's minimum standards. Where the City's standards are greater and do not otherwise conflict with the County's storm drainage standards and maintenance practices, the City's standards are acceptable.

If the applicant is advised to or chooses to modify the proposal in terms of access location and/or design, the County DTD requests an opportunity to review and comment on such changes prior to such a decision being made.

Note: If the City annexes the Harmony Road right-of-way along the subject property's frontage and takes jurisdiction of the road for maintenance prior to the proposed development acquiring the necessary development permits, the applicable City standards from MMC Chapter 19.700 (Public Facility Improvements), MMC Title 12 (Streets, Sidewalks, and Public Places), and the City Public Works Standards will take precedence

over the following requirements set forth for County road access approval and frontage improvements.

- a. All frontage improvements in or adjacent to Clackamas County right-of-way shall be in compliance with *Clackamas County Roadway Standards*.
- b. Prior to commencement of site work, a Development Permit and a Utility Placement Permit are required and must be obtained from Clackamas County for all work performed in the road right-of-way.
- c. The applicant shall verify by a professional survey that adequate right-of-way width exists along the entire site frontage on the northerly side of Harmony Rd to permit construction of the required roadway and frontage improvements or shall dedicate additional right-of-way as necessary to provide it. A minimum of 6 in shall be provided between the back of sidewalk and right-of-way.
- d. All dedications or easements for Harmony Rd shall be by separate document unless provided on a recorded plat. The applicant will need to have their surveyor prepare the required exhibits to provide to Sharan Hams-LaDuca in DTD Engineering for review. They can be emailed to SHamsLaDuca@co.clackamas.or.us. Examples of the exhibits are available from Sharan.
- e. The applicant shall grant an 8-ft-wide public easement for signs, slopes, sidewalks and public utilities along the entire Harmony Rd site frontage.
- f. Access to the project site shall be limited to the existing driveway approach on Tax Lots 12E31D 02000 and 02100 (5989 SE Harmony Rd). No direct access to Harmony Rd shall be permitted along the site frontage other than gated emergency vehicle access.
- g. The applicant shall design and construct improvements along the entire site frontage of Harmony Rd. These improvements shall consist of:
 - (1) Up to an 18-ft-wide half-street improvement shall be constructed along the entire site frontage to arterial roadway standards. The structural section for Harmony Rd improvements shall consist of 7.5 in of asphalt concrete, per *Clackamas County Roadway Standards* Standard Drawing C100.
 - (2) Standard curb, or curb and gutter if curblines slope is less than 1%. The existing curb offset shall be maintained
 - (3) Adjacent to the curb, a 5-ft landscape strip, including street trees shall be constructed along the entire site frontage.
 - (4) A minimum 6-ft-wide unobstructed sidewalk shall be constructed along the entire site frontage, per Standard Drawing S960. The transition from curb-tight sidewalk to set-back sidewalk shall include panels at no greater than 45 degrees to the main direction of travel.

- (5) The concrete driveway approach to the gated emergency vehicle access shall be constructed with a mountable curb, per Standard Drawing S180. The Fire District shall approve the gate and access design.
 - (6) The existing driveway drop shall be removed and replaced with curb and landscape strip.
 - (7) Drainage facilities in conformance with *Clackamas County Roadway Standards* Chapter Four.
 - (8) The applicant shall comply with *Clackamas County Roadway Standards* clear zone requirements in accordance with *Roadway Standards* Section 245 along the entire Harmony Rd site frontage.
3. Prior to final inspection of the required building permit and issuance of a certificate of occupancy, the following shall be resolved:
 - a. Provide a narrative describing all actions taken to comply with these conditions of approval. In addition, describe any changes made after the issuance of this land use decision that are not related to these conditions of approval.
 - b. Submit documentation from the project landscape designer attesting that all required site plantings have been completed in conformance with the approved site plans and with City standards. The documentation shall demonstrate that all invasive plants have been removed from within a 10-ft buffer outside the boundary of all mitigation planting areas.
 - c. Demonstrate consistency with what was proposed regarding the design elements addressed in Finding 7-e (e.g., window and door trim, building materials and colors, operable windows, sun shades, etc.).
 - d. Demonstrate that all required improvements related to the revisions listed in Condition 1-b have been completed.

Additional Requirements
Master File #VR-2018-005—Harmony Park Townhomes, Phase II

The following items are not conditions of approval necessary to meet applicable land use review criteria. They relate to other development standards and permitting requirements contained in the Milwaukie Municipal Code (MMC) and Public Works Standards that are required at various points in the development and permitting process.

1. Development Review

An application for Type I development review is required in conjunction with the submittal of the associated development permit application(s).

2. Prior to issuance of any development permit, the following shall be resolved:

a. Submit a final stormwater management plan for on-site facilities to the City of Milwaukie Engineering Department for review and approval. The plan shall be prepared in accordance with Section 2—Stormwater Design Standards of the City of Milwaukie Public Works Standards. If the stormwater management system contains underground injection control devices, submit proof of acceptance of the stormwater system design from the Department of Environmental Quality.

b. Verify that the applicant is working within Clackamas County's process for reviewing, approving, and constructing all required street improvements.

3. Prior to commencement of any earth-disturbing activities, the applicant shall obtain an erosion control permit.

4. Limitations on Development Activity

Development activity on the site shall be limited to 7:00 a.m. to 10:00 p.m. Monday through Friday and 8:00 a.m. to 5:00 p.m. Saturday and Sunday, as per MMC Subsection 8.08.070(I).

5. Mitigation Plantings

General standards for required mitigation are established in MMC Subsection 19.402.11.B, including requirements for plant size and spacing, as well as for survival and monitoring.

a. For trees, the minimum mitigation tree size is 0.5-in caliper for all species except oak and madrone (1-gallon minimum). Note that the originally submitted mitigation planting plan showed only 1- or 2-gallon tree sizes for most proposed tree species, so the applicant is advised to ensure that the 0.5-in-caliper standard is met.

b. A minimum of 80% of the trees and shrubs shall remain alive on the second anniversary of the date the mitigation planting is completed. Monitoring is the ongoing responsibility of the property owner. Plants that die shall be replaced in kind as needed to ensure the minimum 80% survival rate. An annual report on the survival rate of all plantings shall be submitted for 2 years.

6. Prior to final inspection of any building permit and issuance of a certificate of occupancy, the following shall be resolved:
 - a. Construct a private stormwater management system on the proposed development property for runoff created by the property. The private stormwater management system shall be constructed to the requirements of the approved stormwater management plan.
 - b. Install all public underground utilities, including private stubs for utility service, prior to construction of new curb, sidewalk, and final street surface.
 - c. Confirm that all improvements required by Clackamas County have been constructed to meet County requirements, preferably by demonstrating approval of final inspections by the County.
 - d. Upon completion of building and site utilities, submittal of a private stormwater maintenance agreement is required. This agreement shall be recorded with Clackamas County.

The recorded document will ensure that maintenance of the on-site storm facilities is properly maintained. This agreement will cover the maintenance requirements of the storm cartridge system, as well as the maintenance requirements of existing utility easements on site.

There are two utility easements on the development site that contain City of Milwaukie sewer mains. One is located on the north side of the property and the other is located on the east side of the property. The construction of the building will limit access to the sewer manhole located near the east property line north of the proposed building. There is currently access to this manhole, but with the construction of the building only pedestrian access will be provided. City crews will need access to the downstream manhole, which is located on the north property line. The property owner will be responsible for maintaining an 8-ft-wide pathway clear of vegetation to provide access for City crews to regularly clean and inspect the sewer main lines located on site. Final language of maintenance requirements will be finalized with the maintenance agreement upon completion of building construction.

- e. Remove all signs, structures, or vegetation in excess of 3 ft in height located in "clear vision areas" at intersections of streets, driveways, and alleys fronting the proposed development.
7. Expiration of Approval
 - a. As per MMC Subsection 19.1001.7.E.1.a, proposals requiring any kind of development permit must complete both of the following steps:
 - (1) Obtain and pay for all necessary development permits and start construction within two (2) years of land use approval.
 - (2) Pass final inspection and/or obtain a certificate of occupancy within four (4) years of land use approval.

- b. As per MMC Subsection 19.1001.7.E.2.b, land use approvals shall expire unless both steps noted above have been completed or unless the review authority specifies a different expiration date in the land use decision to accommodate large, complex, or phased development projects.

8. Ongoing Maintenance of Off-Street Parking Areas

As per MMC Subsection 19.602.2, property owners shall comply with the regulations of Chapter 19.600 by ensuring conformance with the standards of Chapter 19.600 related to ongoing maintenance, operations, and use of off-street parking and loading areas.



PO Box 1920, Silverton, OR 97381
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**CITY OF MILWAUKIE
APPLICATION FOR
LAND USE REVIEW**

**HARMONY PARK
TOWNHOMES PH II**

Location: 6115 SE Harmony Road
Tax Lot 2200 of
Tax Map 1S2E31D in
Clackamas County, Oregon

Prepared by: Steve Kay, AICP

Prepared for: HPA 2, LLC
10117 SE Sunnyside Road, #545
Clackamas, OR 97015

May 29, 2018

APPLICANT'S STATEMENT

PROJECT NAME: Harmony Park Townhomes PH II

REQUEST: Approval of a Type II Development Review Application with a Concurrent Type III Variance to the Side Yard Height Plane, Front Yard Setback, and Parking Lot Landscaping Standards, and a Type III Review for Proposed Activities within a Water Quality Resource (WQR) Area

ASSESSOR'S DESCRIPTION: Tax Lot 2200 of Tax Map 1S2E31D
Clackamas County, Oregon

APPLICANT'S REPRESENTATIVE: Steve Kay, AICP
Cascadia Planning + Development Services
P.O. Box 1920
Silverton, OR 97381
503-804-1089
steve@cascadiapd.com

APPLICANT/PROPERTY OWNER: HPA 2, LLC
10117 SE Sunnyside Road, #545
Clackamas, OR 97015

PROPERTY SIZE: 1.33 acres +/-

LOCATION: 6115 SE Harmony Road
Milwaukie, OR 97222

I. APPLICABLE REGULATIONS

A. MILWAUKIE COMPREHENSIVE PLAN

B. MILWAUKIE MUNICIPAL CODE

TITLE 19: ZONING

Chapter 19.300: Base Zones

Section 19.302: Medium and High Density Residential Zones

Chapter 19.400: Overlay Zones and Special Areas

Section 19.402: Natural Resources NR

Chapter 19.500: Supplementary Development Regulations

Section 19.504: Site Design Standards

Section 19.505: Building Design Standards

Chapter 19.600: Off-Street Parking and Loading

Section 19.604: General Parking Standards

Section 19.605: Vehicle Parking Quantity Requirements

Section 19.606: Parking Area Design and Landscaping

Section 19.607: Off-Street Parking Standards for Residential Areas

Section 19.608: Loading

Section 19.609: Bicycle Parking

Section 19.610: Carpool and Vanpool Parking

Chapter 19.700: Public Facility Improvements

Section 19.702: Applicability

Section 19.703: Review Process

Section 19.704: Transportation Impact Evaluation

Section 19.708: Transportation Facility Requirements

Section 19.709: Public Utility Requirements

Chapter 19.900: Land Use Applications

Section 19.906: Development Review

Section 19.911: Variances

Chapter 19.1000: Review Procedures

Section 19.1002: Pre-Application Conference

Section 19.1006: Type III Review

Chapter 19.1200: Solar Access Protection

Section 19.1203: Solar Access for New Development

II. BACKGROUND:

The applicant and property owner, HPA 2 LLC, is requesting land use approval of a Type II Development Review application with a concurrent Type III Variance to the side yard height plane limit, front yard setback, and parking lot perimeter landscaping standards. In addition, a Type III Review is also requested for proposed activities within a water quality resource (WQR) area. The subject site is located at 6115 SE Harmony Road and was annexed into the city limits of Milwaukie in 2017. The 1.33 +/- acre site is zoned R-2 (Medium Density Residential) and is identified by the Clackamas County Assessor as Tax Lot 2200 of Tax Map 1S2E31D. The applicant is also the property owner of the Harmony Park Apartments, located directly west of the subject site at 5989 SE Harmony Road. The submitted application is to permit the development of the Harmony Park Townhomes PH II project, which consists of a 15-unit apartment building and associated site improvements.

The attached Existing Conditions Plan demonstrates that the subject site is currently vacant and slopes down from the north and south property lines towards the middle of the property (see Exhibit 4). This central lowland area of the parcel contains Minthorn Creek and an associated wetland on the north side of the waterway. The applicant has submitted a Water Quality Resource Site Assessment/Mitigation Plan which evaluates on-site natural resources, delineates the WQR, and identifies mitigation measures for proposed WQR impacts (see Exhibit 8). Also attached is the applicant's Wetland/Waters Delineation Report and Department of State Lands Wetland Delineation Concurrence Letter, demonstrating acceptance of the report findings (see Exhibits 6 and 7).

As illustrated by the attached Preliminary Site Plan, transportation facilities have been designed to meet the needs of the proposed use (see Exhibit 4). The site fronts SE Harmony Road, which is designated as an Arterial Street and is under Clackamas County jurisdiction. Due to a minimum 300-ft. driveway spacing standard for this roadway, the applicant is proposing to use the existing driveway and access easement at 5989 SE Harmony Road when providing access to the Harmony Park Townhomes PH II project. In addition, to provide needed access for waste management services, the applicant is proposing to consolidate waste and recycling storage for the new development with the existing apartments at 5989 SE Harmony Road. Fire apparatus access for the proposed development is proposed with a direct on-site gated driveway connection to SE Harmony Road. To meet Arterial Street improvement standards for the proposed development, the attached Preliminary Development Plans indicate that additional right-of-way will be dedicated and the applicant will install a 5-ft. landscape strip, street trees, and a 6-ft. sidewalk along the site's SE Harmony Road frontage (see Exhibit 4).

The applicant's Preliminary Development Plans demonstrate that existing public utilities in the vicinity of the site are adequately sized to accommodate the proposed development. Public water will serve the new apartment building by extending a lateral from the existing main line within SE Harmony Road. Sanitary Sewer will be provided by connecting the new apartment building to an existing on-site manhole located on the south site of Minthorn Creek. The attached plans and Preliminary Stormwater Report indicate that stormwater will be managed by collecting runoff from new impervious surfaces, detaining and treating drainage on-site, and then releasing the stormwater at the pre-development rate to Minthorn Creek.

This Applicant's Statement addresses applicable provisions of the Milwaukie Municipal Code. Copies of the signed Application Form, Property Deed, City Pre-Application Conference Report, and other required exhibits have been attached to this narrative. The exhibits and narrative demonstrate that the submitted land use application meets the criteria for approval.

III. FINDINGS

A. MILWAUKIE COMPREHENSIVE PLAN

COMMENT:

Except where required by the Milwaukie Municipal Code, this application is not required to address the City's goals and policies related to the development of land, since the Milwaukie Comprehensive Plan is implemented by the Code.

B. MILWAUKIE MUNICIPAL CODE

TITLE 19: ZONING

Chapter 19.300: Base Zones

Section 19.302: Medium and High Density Residential Zones

19.302.2: Allowed Uses in Medium and High Density Residential Zones

Uses allowed, either outright or conditionally, in the medium and high density residential zones are listed in Table 19.302.2 below. Similar uses not listed in the table may be allowed through a Director's Determination pursuant to Section 19.903. Notes and/or cross references to other applicable code sections are listed in the "Standards/Additional Provisions" column.

COMMENT:

The applicant is requesting approval of a Development Review application to permit the development of a 15-unit multi-family structure in the R-2 (Medium Density Residential) zone. Per Table 19.302.2, the proposed use is permitted in the zone.

19.302.4 : Development Standards

In the medium and high density residential zones, the development standards in Table 19.302.4 apply. Notes and/or cross references to other applicable code sections are listed in the "Standards/Additional Provisions" column. Additional standards are provided in Section 19.302.5.

COMMENT:

The submitted Preliminary Site Plan identifies proposed setbacks for the proposed use. Due to steep topography near the creek and constraints associated with the WQR, the applicant is requesting a Type III Variance to permit a 12-ft. front yard setback when 15-ft. is required. Due to these challenges with the site, the applicant is also requesting a Type III Variance to permit a 35-ft. side yard height plane for the rear side of the apartment building. The attached Preliminary Site Plan and Building Elevations demonstrate that the proposed development meets all other setback standards, lot dimension and area standards, and height and lot coverage standards (see Exhibit 4). As required, the applicant has addressed the proposed variances under Section 19.911.

19.302.5: Additional Development Standards

A. heights

In the medium and high density zones, the required side yard is determined as described below. These measurements apply only to required side yards and do not apply to required street side yards.

- 1. The side yard for development other than a rowhouse shall be at least 5 ft.**
- 2. There is no required side yard for rowhouses that share 2 common walls. The required side yard for an exterior rowhouse that has only 1 common wall is 0 ft for the common wall and 5 ft for the opposite side yard. An exterior rowhouse on a corner lot shall meet the required street side yard setback in Subsection 19.302.4.B.1.b.**

COMMENT:

The subject site is located within the medium density R-2 zone. The applicant is requesting Development Review to permit the construction of a 15-unit apartment building on the property. The attached Preliminary Site Plan indicates that the applicant is proposing a 5-ft. minimum setback for the proposed development, meeting the standards of this section (see Exhibit 4).

B. Lot Coverage

The lot coverage standards in Subsection 19.302.4.B.4 are modified for specific uses and lot sizes as described below. The reductions and increases are additive for lots that are described by one or more of the situations below.

COMMENT:

Table 19.302.4 indicates that the maximum lot coverage standard in the R-2 zone is 45%. The attached Preliminary Site Plan indicates that the proposed lot coverage for the development is only 10% of the site (see Exhibit 4). Reductions and increases to lot coverage standards under this section do not apply to the proposed apartment building.

C. Minimum Vegetation

At least half of the minimum required vegetation area must be suitable for outdoor recreation by residents, and not have extreme topography or dense vegetation that precludes access.

COMMENT:

The attached Preliminary Site Plan indicates that the minimum vegetation area for the site is 8,645 square feet (see Exhibit 4). The proposed common open space on the south side of the creek contains 7,651 sq. ft., which is more than half of the needed vegetation area. An additional 10,864 sq. ft. of vegetated area is provided on the north side of Minthorn Creek. As demonstrated by the site plan, the proposed outdoor recreation area will contain a 5-ft. wide decomposed granite path, 6-ft. benches, and an 8-ft. picnic table. Therefore, the minimum vegetation standard will be met.

D. Front Yard Minimum Vegetation

At least 40% of the front yard shall be vegetated. The front yard vegetation area required by this subsection counts toward the minimum required vegetation for the lot. A property may provide less than the 40% of the front yard vegetation requirement if it is necessary to provide a turnaround area so that vehicles can enter a collector or arterial street in a forward motion.

COMMENT:

The subject site's 12-ft. front yard contains 1,974 square feet. The landscaped portion of the front yard contains 1,060 sq. ft., which is 54% of the total front yard area. Therefore, this standard has been met.

E. Height Exceptions

1 additional story may be permitted in excess of the required maximum standard. For each additional story, an additional 10% of site area beyond the minimum is required to be retained in vegetation.

COMMENT:

Per Table 19.302.4, a 3-story building is permitted under R-2 zone standards. To reduce the building footprint and limit impacts to the WQR, the applicant is requesting the approval of a 4-story apartment building. The attached Preliminary Site Plan indicates that a minimum of 8,645 sq. ft. of vegetated area is required for the subject site, however the applicant is proposing to provide 41,231 sq. ft. of vegetated area with the proposed development (see Exhibit 4). Since the proposed development provides an additional 57% of vegetated area beyond the minimum required, the 4-story apartment building permitted under this section.

F. Residential Densities

- 1. The minimum and maximum development densities in Subsection 19.302.4.C.1 are applicable for land divisions, replats that change the number of lots, and any development that would change the number of dwelling units on a lot. Development of a single-family detached dwelling or an accessory dwelling is exempt from the minimum and maximum density requirements.**

COMMENT:

The applicant is not proposing a land division, single-family detached dwellings, or single-family attached dwellings with this application. Therefore, these standards do not apply.

- 2. Multifamily development in the R-2, R-1, and R-1-B Zones is subject to the minimum site size requirements in Table 19.302.5.F.2. In the event that the minimum site size requirements conflict with the development densities in Subsection 19.302.4.C.1, the site size requirements in Table 19.302.F.2 shall prevail.**

COMMENT:

Per Table 19.302.5.F.2, the minimum site size for a multi-family development containing 15 dwelling units is 40,000 sq. ft. $((5,000 \text{ sq. ft.} \times 1) + (2,500 \text{ sq. ft.} \times 14) = 40,000)$. Since the net site area contains 57,634 sq. ft., the minimum site size requirements of Table 19.302.5.F.2 have been met.

G. Accessory Structure Standards

Standards specific to accessory structures are contained in Section 19.502.

COMMENT:

The applicant is not proposing the development of an accessory structure, therefore these standards do not apply.

H. Building Limitations

- 2. Multifamily buildings shall not have an overall horizontal distance exceeding 150 linear ft as measured from end wall to end wall.**

COMMENT:

The attached Building Floor Plans demonstrate that the proposed multi-family building has an overall length of 100.8 feet. Therefore, this standard has been met.

I. Transition Measures

The following transition measures apply to multifamily development that abuts an R-10-, R-7-, or R-5-zoned property.

- 1. In the portion of the site within 25 ft of the lower density residential zone, the building height limits are equal to those of the adjacent residential zone.**
- 2. Where the boundary of the lower density zone lies within, or on the edge of, a right-of-way; the building height limit, for the portion of the site within 15 ft of the lot line bordering the right-of-way, is equal to the height limit of the lower density residential zone.**

COMMENT:

The attached Aerial Photograph/Land Use Plan indicates that the subject site and the adjacent parcel to the west are located within the city limits and are zoned R-2. To the east of the site is a MR-1 zoned parcel that is located within Clackamas County. To the south of the site across SE Harmony Road is a GI zoned parcel that is also located within Clackamas County. Directly north of the site is the Southern Pacific Railroad right-of-way, which is located in the city limits and is zoned R-5. Since the proposed structure is located approximately 178-ft. from the northern property line, the above standards have been met.

J. Off-Street Parking and Loading

Off-street parking and loading is required as specified in Chapter 19.600.

COMMENT:

As required, the applicant has addressed off-street parking and loading standards under Chapter 19.600.

K. Public Facility Improvements

Transportation requirements and public facility improvements are required as specified in Chapter 19.700.

COMMENT:

As required, the applicant has addressed public facility improvement standards under Chapter 19.700.

L. Additional Standards

Depending upon the type of use and development proposed, the following sections of Chapter 19.500 Supplementary Development Regulations may apply. These sections are referenced for convenience, and do not limit or determine the applicability of other sections within the Milwaukie Municipal Code.

- 1. Subsection 19.504.4 Buildings on the Same Lot**
- 2. Subsection 19.504.8 Flag Lot Design and Development Standards**
- 3. Subsection 19.504.9 On-Site Walkways and Circulation**
- 4. Subsection 19.504.10 Setbacks Adjacent to Transit**
- 5. Subsection 19.505.1 Single-Family Dwellings and Duplexes**
- 6. Subsection 19.505.2 Garages and Carports**
- 7. Subsection 19.505.3 Multifamily Housing**
- 8. Subsection 19.505.4 Cottage Cluster Housing**
- 9. Subsection 19.505.8 Building Orientation to Transit**
- 10. Subsection 19.506.4 Manufactured Dwelling Siting and Design Standards, Siting Standards**

COMMENT:

As required, the applicant has addressed applicable site design standards under Section 19.504 and applicable building design standards under Section 19.505.

Chapter 19.400: Overlay Zones and Special Areas

Section 19.402: Natural Resources NR

19.402.3: Applicability

- A. The regulations in Section 19.402 apply to all properties that contain, or are within 100 ft of a WQR and/or HCA (including any locally significant Goal 5 wetlands or habitat areas identified by the City of Milwaukie) as shown on the Milwaukie Natural Resource Administrative Map (hereafter “NR Administrative Map”).

COMMENT:

According to the Milwaukie Natural Resource Administrative Map, the subject site contains a portion of Minthorn Creek and an associated WQR. Therefore, the regulations of this chapter apply to the proposed development.

- F. In the context of designated natural resources, “disturbance” is a condition or result of an act that “disturbs” as defined in Section 19.201. Disturbance can be either temporary or permanent as noted below.
 - 1. Temporary disturbances are those that occur during an allowed or approved development or activity but will not persist beyond completion of the project. Temporary disturbances include, but are not limited to, accessways for construction equipment; material staging and stockpile areas; and excavation areas for building foundations, utilities, stormwater facilities, etc.

COMMENT:

To document on-site natural resources, the applicant's biologist has prepared the attached Water Quality Resource Site Assessment (see Exhibit 8). The limits of the delineated WQR are illustrated on the attached Preliminary Site Plan (see Exhibit 4). The attached Preliminary Grading Plan illustrates that construction activities will create a temporary disturbance when excavation occurs for the proposed building foundation and parking lot retaining wall. Temporary disturbance will also be required when connecting sanitary sewer service to an existing manhole within the WQR, and when storm lines are installed to the proposed outfall to Minthorn Creek. The total temporary disturbance area for the proposed development is 3,556 square feet.

- 2. Permanent disturbances are those that remain in place after an allowed or approved development or activity is completed. Permanent disturbances include, but are not limited to, buildings, driveways, walkways, and other permanent structures.**

COMMENT:

As demonstrated by the attached Existing Conditions Plan, the site is significantly constrained by the location of Minthorn Creek, the associated WQR, and steeper topography adjacent to the waterway. To develop the required minimum number of dwelling units while addressing these site challenges, the applicant is proposing to permanently impact 2,847 sq. ft. of the WQR on the south side of the creek. As required, the proposed permanent disturbance has been addressed through the Type III review process under Section 19.402.8.

- G. If more than 150 sq ft of area will be disturbed in conjunction with a proposed activity listed as exempt in Subsection 19.402.4.B, a construction management plan shall be submitted according to the provisions of Subsection 19.402.9. This requirement applies even when the proposed activity will not occur within a designated natural resource but is within at least 100 ft of the resource, in accordance with Table 19.402.3.**

COMMENT:

Since the proposed disturbance area is larger than 150 sq. ft., the applicant has submitted a Construction Management Plan with this application (see Exhibit 4).

19.402.4: Exempt Activities

A. Outright Exemptions

The following activities in WQRs or HCAs are exempt from the provisions of Section 19.402:

- 17. Establishment and maintenance of trails in**

accordance with the following standards:

- a. Trails shall be confined to a single ownership or within a public trail easement.
- b. Trails shall be no wider than 30 in. Where trails include stairs, stair width shall not exceed 50 in and trail grade shall not exceed 20%, except for the portion of the trail containing stairs.
- c. Trails shall be unpaved and constructed with nonhazardous, pervious materials.
- d. Trails shall be located at least 15 ft. from the top of bank of all water bodies.
- e. Plants adjacent to trails may be trimmed, but trimming clearances shall not exceed a height of 8 ft. and a width of 6 ft.
- f. Native trees of larger than 6-in diameter, and native shrubs or conifers larger than 5 ft. tall, shall not be removed.

COMMENT:

The attached Preliminary Site Plan indicates that the applicant is proposing to establish a 30-in. wide trail which is located a minimum of 15-ft. from Minthorn Creek (see Exhibit 4). As required, the trail will be under single ownership and its construction will not cause the removal of native vegetation listed above. The attached plan indicates that the trail will be constructed with a decomposed granite surface, which is a non-hazardous and pervious material.

19.402.8: Activities Requiring Type III Review

Within either WQRs or HCAs, the following activities are subject to Type III review and approval by the Planning Commission under Section 19.1006, unless they are otherwise exempt or permitted as a Type I or II activity.

- A. The activities listed below shall be subject to the general discretionary review criteria provided in Subsection 19.402.12:
 1. Any activity allowed in the base zone that is not otherwise exempt or permitted as a Type I or II activity.

COMMENT:

Due to the size of the permanent disturbance area within the WQR, the proposed development is classified as an Activity Requiring Type III Review. As required, the applicant has addressed the general discretionary review criteria under Subsection 19.402.12 and the Planning Commission will issue a decision regarding this request.

19.402.9: Construction Management Plans

- A. Construction management plans are not subject to Type I review per Section 19.1004 but shall be reviewed in similar fashion to an erosion control permit (MMC Chapter 16.28).**
- B. Construction management plans shall provide the following information:**
 - 1. Description of work to be done.**
 - 2. Scaled site plan showing a demarcation of WQRs and HCAs and the location of excavation areas for building foundations, utilities, stormwater facilities, etc.**
 - 3. Location of site access and egress that construction equipment will use.**
 - 4. Equipment and material staging and stockpile areas.**
 - 5. Erosion and sediment control measures.**
 - 6. Measures to protect trees and other vegetation located within the potentially affected WQR and/or HCA. A root protection zone shall be established around each tree in the WQR or HCA that is adjacent to any approved work area. The root protection zone shall extend from the trunk to the outer edge of the tree's canopy, or as close to the outer edge of the canopy as is practicable for the approved project. The perimeter of the root protection zone shall be flagged, fenced, or otherwise marked and shall remain undisturbed. Material storage and construction access is prohibited within the perimeter. The root protection zone shall be maintained until construction is complete.**

COMMENT:

As demonstrated by the attached Preliminary Construction Management Plan, the submitted plan provides all of the information listed above (see Exhibit 4).

19.402.11: Development Standards

A. Protection of Natural Resources During Site Development

During development of any site containing a designated natural resource, the following standards shall apply:

- 1. Work areas shall be marked to reduce potential damage to the WQR and/or HCA.**
- 2. Trees in WQRs or HCAs shall not be used as anchors for stabilizing construction equipment.**
- 3. Native soils disturbed during development shall be conserved on the property.**
- 4. An erosion and sediment control plan is required and shall be prepared in compliance with requirements set forth in the City's Public Works Standards.**
- 5. Site preparation and construction practices shall be followed that prevent drainage of hazardous materials or erosion, pollution, or sedimentation to any WQR adjacent to the project area.**
- 6. Stormwater flows that result from proposed development within and to natural drainage courses shall not exceed predevelopment flows.**
- 7. Prior to construction, the WQR and/or HCA that is to remain undeveloped shall be flagged, fenced, or otherwise marked and shall remain undisturbed. Such markings shall be maintained until construction is complete.**
- 8. The construction phase of the development shall be done in such a manner as to safeguard the resource portions of the site that have not been approved for development.**

9. Where practicable, lights shall be placed so that they do not shine directly into any WQR and/or HCA location. The type, size, and intensity of lighting shall be selected so that impacts to habitat functions are minimized.
10. All work on the property shall conform to a construction management plan prepared according to Subsection 19.402.9.

COMMENT:

As required, the applicant will follow all of the required development standards listed above during the development of the site. The City will verify that these standards are met during building permit review for the project.

B. General Standards for Required Mitigation

Where mitigation is required by Section 19.402 for disturbance to WQRs and/or HCAs, the following general standards shall apply:

1. Disturbance
 - a. Designated natural resources that are affected by temporary disturbances shall be restored, and those affected by permanent disturbances shall be mitigated, in accordance with the standards provided in Subsection 19.402.11.C for WQRs and Subsection 19.402.11.D.2 for HCAs, as applicable.
 - b. Landscape plantings are not considered to be disturbances, except for those plantings that are part of a non-exempt stormwater facility; e.g., raingarden or bioswale.

COMMENT:

The attached Water Quality Resource Site Assessment/Mitigation Plan, indicates that temporary disturbances will be restored, and permanent disturbances will be mitigated, in accordance with the above standards (see Exhibit 8).

2. Required Plants

Unless specified elsewhere in Section 19.402, all trees, shrubs, and ground cover planted as mitigation shall be native plants, as identified

on the Milwaukie Native Plant List. Applicants are encouraged to choose particular native species that are appropriately suited for the specific conditions of the planting site; e.g., shade, soil type, moisture, topography, etc.

3. Plant Size

Required mitigation trees shall average at least a ½-in caliper—measured at 6 in above the ground level for field-grown trees or above the soil line for container-grown trees—unless they are oak or madrone, which may be 1-gallon size. Required mitigation shrubs shall be at least 1-gallon size and 12 in high.

4. Plant Spacing

Trees shall be planted between 8 and 12 ft on center. Shrubs shall be planted between 4 and 5 ft on center or clustered in single-species groups of no more than 4 plants, with each cluster planted between 8 and 10 ft on center. When planting near existing trees, the dripline of the existing tree shall be the starting point for plant spacing measurements.

5. Plant Diversity

Shrubs shall consist of at least 2 different species. If 10 trees or more are planted, then no more than 50% of the trees shall be of the same genus.

COMMENT:

The attached Water Quality Resource Site Assessment/Mitigation Plan specifies plantings which meets the above standards (see Exhibit 8).

6. Location of Mitigation Area

a. On-Site Mitigation

All mitigation vegetation shall be planted on the applicant's site within the designated natural resource that is disturbed, or in an area contiguous to the resource area; however, if the vegetation is planted outside of the resource area, the applicant shall preserve the

contiguous planting area by executing a deed restriction such as a restrictive covenant.

COMMENT:

As required, all mitigation vegetation will be planted on the subject site and will be located within the designated natural resource area.

7. Invasive Vegetation

Invasive nonnative or noxious vegetation shall be removed within the mitigation area prior to planting, including, but not limited to, species identified as nuisance plants on the Milwaukie Native Plant List.

8. Ground Cover

Bare or open soil areas remaining after the required tree and shrub plantings shall be planted or seeded to 100% surface coverage with grasses or other ground cover species identified as native on the Milwaukie Native Plant List. Revegetation shall occur during the next planting season following the site disturbance.

COMMENT:

The attached Water Quality Resource Site Assessment/Mitigation Plan indicates that invasive and noxious vegetation will be removed within the mitigation area (see Exhibit 8). In addition, all remaining bare soil areas will be seeded with native ground cover plant species.

9. Tree and Shrub Survival

A minimum of 80% of the trees and shrubs planted shall remain alive on the second anniversary of the date that the mitigation planting is completed.

a. Required Practices

To enhance survival of the mitigation plantings, the following practices are required:

- (1) Mulch new plantings to a minimum of 3-in depth and 18-in diameter to retain moisture and discourage**

weed growth.

- (2) Remove or control nonnative or noxious vegetation throughout the maintenance period.**

COMMENT:

As required, the applicant will provide mulch and remove non-native and noxious vegetation to enhance survival of the mitigation plantings.

c. Monitoring and Reporting

Monitoring of the mitigation site is the ongoing responsibility of the property owner. Plants that die shall be replaced in kind as needed to ensure the minimum 80% survival rate. The Planning Director may require a maintenance bond to cover the continued health and survival of all plantings. A maintenance bond shall not be required for land use applications related to owner-occupied single-family residential projects. An annual report on the survival rate of all plantings shall be submitted for 2 years.

COMMENT:

As required, the applicant will provide the City with an annual report regarding the survival rate of all plantings for 2 years. During this monitoring period, the applicant will replace dead planting to ensure a minimum 80% survival rate.

10. Light Impacts

Where practicable, lights shall be placed so that they do not shine directly into any WQR and/or HCA location. The type, size, and intensity of lighting shall be selected so that impacts to habitat functions are minimized.

COMMENT:

As required, lights from the proposed development will not shine directly into the WQR. The City will verify that this standard has been met during building permit review for the project.

C. Mitigation Requirements for Disturbance within WQRs

- 1. The requirements for mitigation vary**

depending on the existing condition of the WQR on the project site at the time of application. The existing condition of the WQR shall be assessed in accordance with the categories established in Table 19.402.11.C.

2. When disturbance within a WQR is approved according to the standards of Section 19.402, the disturbance shall be mitigated according to the requirements outlined in Table 19.402.11.C and the standards established in Subsection 19.402.11.B.

COMMENT:

The attached Water Quality Resource Site Assessment/Mitigation Plan evaluates the condition of VECO A (Vegetated Corridor A) on the south side of Minthorn Creek next to the project site, and VECO B (Vegetated Corridor B) on the north side of Minthorn Creek (see Exhibit 8). Using the categories listed under Table 19.402.11.C, the report determined that portions of VECO A are currently in poor (Class C) and marginal (Class B) condition. The resources within VECO B were determined to be in good (Class A) condition. As required, the report indicates that the applicant will mitigate proposed disturbance to VECO A according to the Class B and C standards listed under Table 19.402.11.C.

E. Standards for Special Uses

Unless they are exempt per Subsection 19.402.4, or do not meet the nondiscretionary standards for HCAs provided in 19.402.11.D, the special uses listed in Subsection 19.402.7.A are subject to Type II review if they comply with the applicable standards in Subsection 19.402.11.E. Otherwise, the special uses listed in Subsection 19.402.7.A are subject to Type III review and the general discretionary review criteria provided in Subsection 19.402.12.

1. General Standards for Special Uses

Except for stormwater management plans, all nonexempt special uses listed in Subsections 19.402.11.E.2 through 5 that do not meet the nondiscretionary standards for HCAs provided in Subsection 19.402.11.D shall comply with the specific applicable standards in Subsection 19.402.11.E, as well as with the following general standards:

- a. **In addition to a construction management plan prepared according to the standards of Subsection 19.402.9; a mitigation plan shall be submitted per Subsection 19.402.11.D.2 or 19.402.12.C.2 for HCAs, as applicable, or per Subsection 19.402.11.C for WQRs. WQRs and HCAs shall be restored and maintained in accordance with the approved mitigation plan.**

COMMENT:

Since the proposed disturbance to the WQR on the south side of Minthorn Creek exceeds the thresholds for Type II Review, the proposed development is considered a Special Use and is subject to the standards of this section. As required, the applicant has submitted a Preliminary Grading/Erosion and Soil Control/Construction Management Plan in accordance with the standards of Section 19.402.9 (see Exhibit 4). In addition, the applicant has submitted a Water Quality Site Assessment/Mitigation Plan in accordance with Table 19.402.11C (see Exhibit 8).

- b. **Existing vegetation outside of approved work areas shall be protected and left in place. Work areas shall be carefully located and marked to reduce potential damage to WQRs and HCAs. Trees in WQRs or HCAs shall not be used as anchors for stabilizing construction equipment.**

COMMENT:

The submitted Preliminary Construction Management Plan indicates the area outside of the approved work area will be protected from disturbance during construction activities (see Exhibit 4). The plan demonstrates that the designated work areas reduce damage to the WQR resources.

- c. **Where existing vegetation has been removed, or the original land contours disturbed, the site shall be revegetated and the vegetation shall be established as soon as practicable. Interim erosion control measures, such as mulching, shall be used to avoid erosion on bare areas.**

COMMENT:

The applicant's Preliminary Construction Management Plan identifies erosion control measures which comply with the standards listed above (see Exhibit 4).

2. Public or Private Utility Facilities

In addition to the requirements of Subsection 19.402.11.E.1, the following disturbance area limitations apply to all new public and private utility facilities, as well as to facility upgrades that are not exempted by Subsection 19.402.4 or that do not meet the nondiscretionary standards for HCAs provided in Subsection 19.402.11.D.

- a. The disturbance area for the upgrade of existing utility facilities shall be no greater than 15 ft wide.
- b. The disturbance area for new underground utility facilities shall be no greater than 25 ft wide and disturb no more than 200 linear feet of WQR within any 1,000-linear-foot stretch of WQR. Such a disturbance area shall be restored with the exception of necessary access points to the utility facility.
- c. Disturbance areas shall be revegetated.
- d. No fill or excavation is allowed within the ordinary high water mark of a stream, unless a permit is obtained from the Corps through the Standard Local Operating Procedures for Endangered Species (SLOPES) process.

COMMENT:

Temporary disturbance of the WQR will be required when connecting sanitary sewer service for the proposed development to the existing manhole within VECO A, and when storm service lines for the development are installed to the storm outfall to Minthorn Creek. The attached Preliminary Construction Management Plan demonstrates that the proposed disturbance areas for the new utility facilities will be no greater than 25-ft. wide and no work will occur within the ordinary high water mark of Minthorn Creek (see Exhibit 4). The attached Water Quality Site Assessment/Mitigation Plan indicates that the temporary disturbance areas will be revegetated in accordance with the standards of Table 19.402.11C.

3. New Stormwater Facilities

In addition to the requirements of Subsection 19.402.11.E.1, new stormwater facilities that are not exempted by Subsection 19.402.4, or that do not meet the nondiscretionary standards for HCAs provided in Subsection 19.402.11.D, shall not encroach more than 25 ft into the outer boundary of the WQR adjacent to a primary protected water feature.

COMMENT:

The attached Preliminary Development Plans indicates that a storm outfall facility will discharge treated and detained stormwater to Minthorn Creek. As required, the proposed facility is located less than 25-ft. from the southern WQR boundary.

5. Stormwater Management Plans

Stormwater management plans that authorize disturbance within the WQR or HCA may be approved if in compliance with all of the following standards:

- a. Stormwater facilities will be designed to provide an environmentally beneficial hydrological impact on protected water features.**
- b. Protected water features will be protected from erosion by implementing a stream protection strategy and quantity control strategies.**

COMMENT:

As demonstrated by the attached Preliminary Stormwater Report, the proposed storm outfall facility will discharge stormwater at the pre-development rate into Minthorn Creek (see Exhibit 5). As such, the facility will ensure that existing hydrological function of the creek will be maintained. As demonstrated by the attached Preliminary Development Plans, collected stormwater will be treated and detained prior to being released into a storm outfall structure that will dissipate drainage velocity and mitigate potential erosion on the site (see Exhibit 4).

- c. **Watershed health will be improved through the use of vegetated facilities to meet pollution reduction, flow control, and infiltration goals. These facilities will be maintained in a manner that ensures a continued benefit to watershed health.**
- d. **Proposed stormwater management facilities will correct or improve conditions caused by past management and/or disturbance events, if any are present.**
- e. **Where there is no reasonable expectation of returning to natural conditions, beneficial habitat, vegetation, and stream function and hydrology will be restored to the fullest extent practicable within developed areas.**

COMMENT:

The submitted Water Quality Resource Site Assessment/Mitigation Plan indicates that the applicant will install mitigation plantings on the south side of Minthorn Creek following the proposed construction activities (see Exhibit 8). The attached report illustrates that the mitigation plantings will remove invasive species and improves the existing health of the watershed by enhancing habitat, vegetation, stream function, and hydrology within the WQR.

19.402.12: General Discretionary Review

This subsection establishes a discretionary process by which the City shall analyze the impacts of development on WQRs and HCAs, including measures to prevent negative impacts and requirements for mitigation and enhancement. The Planning Director may consult with a professional with appropriate expertise to evaluate an application, or they may rely on appropriate staff expertise

to properly evaluate the report's conclusions.

A. Impact Evaluation and Alternatives Analysis

An impact evaluation and alternatives analysis is required to determine compliance with the approval criteria for general discretionary review and to evaluate development alternatives for a particular property. A report presenting this evaluation and analysis shall be prepared and signed by a knowledgeable and qualified natural resource professional, such as a wildlife biologist, botanist, or hydrologist. At the Planning Director's discretion, the requirement to provide such a report may be waived for small projects that trigger discretionary review but can be evaluated without professional assistance.

The alternatives shall be evaluated on the basis of their impact on WQRs and HCAs, the ecological functions provided by the resource on the property, and off-site impacts within the subwatershed (6th Field Hydrologic Unit Code) where the property is located. The evaluation and analysis shall include the following:

1. Identification of the ecological functions of riparian habitat found on the property, as described in Subsection 19.402.1.C.2.

COMMENT:

The attached Water Quality Resource Site Assessment provides a description of the ecological functions of the WQR in accordance with Subsection 19.402.1.C.2 (see Exhibit 8). These ecological functions include the provision of shade and microclimate along Minthorn Creek, providing stream moderation, water storage, water infiltration, bank stabilization, and large wood recruitment and retention for the waterway.

2. An inventory of vegetation, sufficient to categorize the existing condition of the WQR per Table 19.402.11.C, including the percentage of ground and canopy coverage materials within the WQR.

COMMENT:

The applicant's Water Quality Resource Site Assessment includes an inventory of vegetation within the WQR area (see Exhibit 8). The inventory is referred to as VECO A on the south side of the creek, and VECO B on the north side of the waterway. The report determined that the condition of VECO A resources are categorized as Class C (poor) and Class B (marginal), while VECO B resources are classified as Class A (good). Canopy coverage for VECO A was determined at 25% to 50%, while VECO B contains more than 50% canopy coverage.

- 3. An assessment of the water quality impacts related to the development, including sediments, temperature and nutrients, sediment control, and temperature control, or any other condition with the potential to cause the protected water feature to be listed on DEQ's 303(d) list.**

COMMENT:

The attached Preliminary Development Plans indicate that the applicant is not proposing to impact Minthorn Creek or the wetland on the north side of the creek. The attached Preliminary Construction Management Plan demonstrates that erosion control measures will be utilized during construction to prevent sediment from entering the water features. The applicant's Preliminary Stormwater Report indicates that drainage from the development will be treated and detained prior to being discharged through a storm outfall to the creek. The plans demonstrate that limited tree removal will maintain existing temperature control within the WQR. These measures will ensure that storm drainage to the creek will not diminish water quality and storm flows will not exceed the pre-development rate.

- 4. An alternatives analysis, providing an explanation of the rationale behind choosing the alternative selected, listing measures that will be taken to avoid and/or minimize adverse impacts to designated natural resources, and demonstrating that:**
 - a. No practicable alternatives to the requested development exist that will not disturb the WQR or HCA.**

COMMENT:

The applicant evaluated four alternatives when determining how development of the site can best avoid and/or minimize impacts to the WQR. As demonstrated by the attached Existing Conditions Plan, the total WQR area contains 33,652 sq. ft. and includes the delineated area within the ordinary high water mark of Minthorn Creek, a wetland on the north side of the stream, and 50-ft. wide vegetated corridors on both sides of the waterway. As indicated by the Preliminary Site Plan, the net site area contains 57,634 square feet. Therefore, the WQR encompasses 58% of the subject property. The remaining site area not encumbered by the WQR contains a total of 23,982 sq. ft., with 7,451 sq. ft. located on the north side of the creek, and 16,531 sq. ft. located on the south side of the waterway.

Alternative A minimizes the access driveway length for the proposed apartments, by providing direct access from SE Harmony Road, and locating the parking lot in the southeast corner of the site. With this configuration, the apartment building would be located in a wider area outside of the WQR in the southwest corner of the site. While this option could reduce the amount of disturbance to the WQR, it is not practicable since SE Harmony Road is classified as an Arterial Street. As such, a direct driveway to the site would not meet the minimum 300-ft. access spacing standard between private drives.

Alternate B also locates the proposed apartment building in a wider area outside of the WQR in the southwest corner of the site. To provide access, the parking lot would be served from an access driveway extending across the front of the site, from the existing Harmony Park Townhomes parking lot to the west of the site, to a proposed parking lot in the southeast corner of the site. This option could reduce the amount of disturbance to the WQR and would meet the Arterial Street access spacing standard. However, this option it is not practicable since the access drive would consume nearly all of the front yard setback area, preventing the applicant from meeting the minimum 40% vegetation within the front yard standard.

Alternative C provides access to the site from SE Railroad Road, located to the north of the subject site. The option would require crossing the Southern Pacific Railroad right-of-way and constructing a bridge across Minthorn Creek to construct the apartments on the south side of the waterway. While this option eliminates access from SE Harmony Road, the design alternative is not practicable since ODOT Rail would not permit a new at-grade rail crossing at this location. This option would also create impacts to the wetland and VECO B on the north side of Minthorn Creek, which are Class A resources and are in better condition than the WQR on the south side of the waterway.

Alternative D provides access through the existing parking lot to the west of the site. With this alternative, a Type III variance would be requested to locate the apartment building within 12-ft. of the front property line in the southeast corner of the site. The amount of impervious area within the front yard setback area is minimized by locating the proposed parking lot in the southeast corner of the site. This option has been selected by the applicant since it is the only practicable option when developing the site. The alternative avoids impacts to Class A resources on the site, while minimizing impacts to Class C resources.

- b. Development in the WQR and/or HCA has been limited to the area necessary to allow for the proposed use.**

COMMENT:

As discussed above, the applicant has evaluated 4 alternatives and determined that Alternate D is the only practicable option when developing the site. The proposed site plan provides efficient driveway access to a parking lot in the southwest corner of the site to limit impervious surfaces. The parking lot has been sized to accommodate the 18 required spaces and replace the 2 lost spaces from the existing parking lot to the west of the site when access is provided. The proposed 21 standard parking spaces provide 1 additional space to account for the inability to provide on-street parking on SE Harmony Road. The number of proposed parking spaces is significantly less than the maximum of 30 spaces as permitted under City standards.

As demonstrated by the attached Preliminary Development Plans, the proposed apartment building is compact and contains a mix of unit types for multi-family residents. The attached Preliminary Site Plan indicates that the applicant is proposing to develop 15 apartment units, which is minimum required density for the site (see Exhibit 4). To minimize the building footprint, the applicant is requesting the approval of additional story under Section 19.302.5.E.

- c. **If disturbed, the WQR can be restored to an equal or better condition in accordance with Table 19.402.11.C; and the HCA can be restored consistent with the mitigation requirements of Subsection 19.402.11.D.2.**

COMMENT:

The attached Water Quality Resource Site Assessment indicates that VECO A of the WQR, on the south side of Minthorn Creek, is in poor and marginal condition (see Exhibit 8). The attached Preliminary Grading Plan demonstrates that the proposed development will temporarily disturb 3,556 sq. ft. of VECO A. The applicant's Preliminary Site Plan also indicates that the proposed improvements will permanently disturb 2,734 sq. ft. of the WQR (see Exhibit 4). The applicant's report includes a mitigation plan for the proposed disturbance to ensure that the WQR is restored to an equal or better condition in accordance with the above standards.

- d. **Road crossings will be minimized as much as possible.**

COMMENT:

The proposed development does not involve a road crossing within the WQR, therefore this standard has been met.

- 5. **Evidence that the applicant has done the following, for applications proposing routine repair and maintenance, alteration, and/or total replacement of existing structures located within the WQR:**

COMMENT:

The applicant is not proposing routine repair and maintenance, alteration, and/or total replacement of existing structures in the WQR. Therefore, this standard does not apply.

- 6. **A mitigation plan for the designated natural resource that contains the following information:**
 - a. **A description of adverse impacts that will be caused as a result of development.**

COMMENT:

As discussed above, the applicant will permanently impact 2,734 sq. ft. of the 10,230 sq. ft. WQR area on the south side of Minthorn Creek. In addition, the proposed development will temporarily impact 3,556 sq. ft. of this area. The attached Water Quality Resource Site Assessment/Mitigation Plan indicates that this WQR, identified as VECO A, is in poor to marginal condition. The submitted report indicates that the proposed temporary disturbance will be restored to equal or better condition than existing resources, and permanent disturbances will be mitigated in accordance with Table 19.402.11.C (see Exhibit 8).

- b. An explanation of measures that will be taken to avoid, minimize, and/or mitigate adverse impacts to the designated natural resource; in accordance with, but not limited to, Table 19.402.11.C for WQRs and Subsection 19.402.11.D.2 for HCAs.**

COMMENT:

The applicant has provided an alternatives analysis to describe how measures have been taken to avoid impacts to the designated natural resource. The attached Water Quality Resource Site Assessment/Mitigation Plan details measures to mitigate proposed impacts to the WQR on the south side of Minthorn Creek (see Exhibit 8). The submitted Construction Management Plan illustrates how proposed impacts can be minimized during development of the site (see Exhibit 4).

- c. Sufficient description to demonstrate how the following standards will be achieved:**
 - (1) Where existing vegetation has been removed, the site shall be revegetated as soon as practicable.**

COMMENT:

The attached Water Quality Resource Site Assessment/Mitigation Plan specifies how the impacted WQR can be revegetated as soon as practicable (see Exhibit 8).

- (2) Where practicable, lights shall be placed so that they do not shine directly into any WQR and/or HCA location. The type, size, and intensity of lighting shall be selected so that impacts to habitat functions are minimized.**

COMMENT:

The applicant is not proposing to install exterior lights which shine directly into the WQR. As required, the City will verify that this standard is met during building permit review.

- (3) Areas of standing trees, shrubs, and natural vegetation will remain connected or contiguous; particularly along natural drainage courses, except where mitigation is approved; so as to provide a transition between the proposed development and the designated natural resource and to provide opportunity for food, water, and cover for animals located within the WQR.**

COMMENT:

The attached Water Quality Resource Site Assessment demonstrates that standing trees and shrubs are located directly adjacent to Minthorn Creek and will not be impacted by the proposed WQR disturbance (see Exhibit 8). As required, the proposed temporary disturbance area will be restored in accordance with Table 19.402.11.C.

- d. A map showing where the specific mitigation activities will occur. Off-site mitigation related to WQRs shall not be used to meet the mitigation requirements of Section 19.402.**

COMMENT:

The attached Water Quality Resource Site Assessment/Mitigation Plan identifies the proposed WQR mitigation area (see Exhibit 8). As required, the mitigation will occur on-site.

- e. An implementation schedule; including a timeline for construction, mitigation, mitigation maintenance, monitoring, and reporting; as well as a contingency plan. All in-stream work in fish-bearing streams shall be done in accordance with the allowable windows for in-water work as designated by ODFW.**

COMMENT:

With approval of this application, the applicant can begin the project in early fall of 2018 and can complete construction activities within the WQR by March 2019. The attached Construction Management Plan details how erosion control measure will be undertaken during the development to protect the WQR (see Exhibit 4). Mitigation activities within the WQR can be completed during the spring of 2019. The attached Water Quality Resource Site Assessment/Mitigation Plan includes a monitoring and reporting plan for the project (see Exhibit 8). As demonstrated by the attached Preliminary Grading Plan, the applicant is not proposing in-stream work with this development.

B. Approval Criteria

- 1. Unless specified elsewhere in Section 19.402, applications subject to the discretionary review process shall demonstrate how the proposed activity complies with the following criteria:**

- a. Avoid**

The proposed activity avoids the intrusion of development into the WQR and/or HCA to the extent practicable. The proposed activity shall have less detrimental impact to the designated natural resource than other practicable alternatives, including significantly different practicable alternatives that propose less development within the resource area.

COMMENT:

The applicant has presented four alternatives under Section 19.402.12.A.4.a. The evaluation determined that Alternative D is the only practicable alternative when developing the site. The proposed activity avoids intrusion of development into the WQR to the extent possible by reducing the front yard setback, minimizing the proposed building footprint, and increasing the height of the building by one-story. The applicant is also proposing to develop the minimum number of units permitted for the site. Therefore, the proposed development avoids intrusion into the WQR to the extent practicable.

- b. Minimize**

If the applicant demonstrates that there is no practicable alternative that will avoid disturbance of the designated natural resource, then the proposed activity within the resource area shall minimize detrimental impacts to the extent practicable.

(1) The proposed activity shall

minimize detrimental impacts to ecological functions and loss of habitat, consistent with uses allowed by right under the base zone, to the extent practicable.

COMMENT:

As indicated by the attached Water Quality Resource Site Assessment, natural resources within the impact area are classified as poor to marginal condition (see Exhibit 8). The report demonstrates that the quality and ecological function of the resources will not be significantly impacted by proposed activities in the southern portion of VECO A. By reducing the front yard setback, minimizing the proposed building footprint, and increasing the height of the building by one-story, the proposed activity minimizes detrimental impacts to existing ecological functions and habitat. The submitted Preliminary Site Plan indicates that the applicant is only proposing to develop 15 dwelling units on the site, which is the minimum required density in the R-2 district (see Exhibit 4). Based on these factors, the proposed activity minimizes impacts to the WQR to the extent practicable.

(2) To the extent practicable within the designated natural resource, the proposed activity shall be designed, located, and constructed to:

(a) Minimize grading, removal of native vegetation, and disturbance and removal of native soils; by using the approaches described in Subsection 19.402.11.A, reducing building footprints, and using minimal excavation foundation systems (e.g., pier, post, or piling foundation).

(b) Minimize adverse hydrological impacts on water resources.

(c) Minimize impacts on wildlife corridors and fish passage.

(d) Allow for use of other techniques to further minimize the impacts of development in the resource area; such as using native plants throughout the site (not just in the resource

area), locating other required landscaping adjacent to the resource area, reducing light spill-off into the resource area from development, preserving and maintaining existing trees and tree canopy coverage, and/or planting trees where appropriate to maximize future tree canopy coverage.

COMMENT:

The attached Water Quality Resource Site Assessment/Mitigation Plan illustrates that the proposed impact area within VECO A contains mostly non-native vegetation (see Exhibit 8). The report specifies that existing vegetation within the impact area will be removed and replaced with native species to improve the quality of the habitat and provide additional tree canopy for the area. To minimize grading within the WQR, the Preliminary Grading Plan indicates that a retaining wall is proposed along the north boundary of the parking lot (see Exhibit 4). Also, by adding an additional story to the apartment structures, the building footprint can be reduced. In addition, the attached Preliminary Site Plan indicates that the applicant is proposing a reduction to the front yard setback to further reduce impacts to the resource area. These measures limit development activities to the southern portion of VECO A so that hydrological impacts to the water resource and wildlife corridor along Minthorn Creek are minimized.

c. Mitigate

If the applicant demonstrates that there is no practicable alternative that will avoid disturbance of the designated natural resource, then the proposed activity shall mitigate for adverse impacts to the resource area. All proposed mitigation plans shall meet the following standards:

- (1) The mitigation plan shall demonstrate that it compensates for detrimental impacts to the ecological functions of resource areas, after taking into consideration the applicant's efforts to minimize such detrimental impacts.**
- (2) Mitigation shall occur on the site of the disturbance, to the extent practicable. Off-site mitigation for disturbance of WQRs shall not be**

approved. Off-site mitigation for disturbance of HCAs shall be approved if the applicant has demonstrated that it is not practicable to complete the mitigation on-site and if the applicant has documented that they can carry out and ensure the success of the off-site mitigation as outlined in Subsection 19.402.11.B.5.

In addition, if the off-site mitigation area is not within the same subwatershed (6th Field Hydrologic Unit Code) as the related disturbed HCA, the applicant shall demonstrate that it is not practicable to complete the mitigation within the same subwatershed and that, considering the purpose of the mitigation, the mitigation will provide more ecological functional value if implemented outside of the subwatershed.

COMMENT:

As discussed above, the applicant has taken measures to minimize impacts to VECO A. The attached Water Quality Resource Site Assessment/Mitigation Plan demonstrates that the proposed mitigation measures will compensate for the impacts to the ecological function of the resource and all mitigation will occur on-site (see Exhibit 8).

- (3) All revegetation plantings shall use native plants listed on the Milwaukie Native Plant List.
- (4) All in-stream work in fish-bearing streams shall be done in accordance with the allowable windows for in-water work as designated by ODFW.
- (5) A mitigation maintenance plan shall be included and shall be sufficient to ensure the success of the planting. Compliance with the plan shall be a condition of development approval.

COMMENT:

The attached Mitigation Plan demonstrates that the proposed revegetation plantings are City-approved native plants (see Exhibit 8). As required, the submitted report provides sufficient detail to ensure the success of the planting. The attached Preliminary Grading Plan indicates that no in-stream work is proposed (see Exhibit 4).

19.402.14: Adjustments and Variances

To encourage applicants to avoid or minimize impacts to WQRs and/or HCAs, several types of adjustments and variances are available for use on any property that includes a WQR or HCA. These include adjustments to specific base zone and lot design standards, discretionary variances, and allowances for residential cluster development.

A. Adjustments

The adjustments provided in Subsection 19.402.14.A shall not be used to avoid the requirement to submit a construction management plan, if deemed applicable per Subsection 19.402.3. The following adjustments are allowed by right as part of any Type I, II, or III application:

1. Adjustments to Base Zone Standards

a. Yard Setback (General)

Yard setback standards may be adjusted by up to 10%. This allowance applies only to the yard requirements established in base zones and does not apply to additional yard requirements for conditional uses or community service uses, yard exceptions established in Subsection 19.501.2, or transition area measures established in Subsection 19.504.6.

COMMENT:

Per Section 19.501.2, additional front yard setbacks are required certain major streets. Since the site is adjacent to SE Harmony Road, an additional 40-ft. front yard setback is required from centerline. The attached Existing Conditions Plan indicates that SE Harmony Road is 60-ft. wide (30-ft. from centerline), therefore the required front yard is 10-ft. plus the standard 15-ft. setback for a total of 25 feet. To minimize impacts to the WQR, the applicant is proposing to reduce the front yard setback to 12 feet. Since the proposed adjustment exceeds a 10% reduction to the standard, the applicant is requesting a Type III Variance from the required front yard setback with this application.

B. Variances

1. **Requests to vary any standards beyond the adjustments allowed in Subsections 19.402.14.A or B shall be subject to the review process and approval criteria for variances established in Section 19.911.**
2. **In granting any variance request related to Section 19.402, the Planning Commission may impose such conditions as are deemed necessary to minimize adverse impacts that may result from granting the variance. Examples of such conditions include, but are not limited to, maintaining a minimum width of the vegetated corridor alongside a primary protected water feature and limiting the amount of WQR for which the adjacent vegetated corridor width can be reduced.**

COMMENT:

As mentioned above, the applicant is proposing to reduce the front yard setback from 25 feet to 12 feet. The proposed adjustment is a 48% reduction to the setback standard, therefore the applicant is requesting a Type III Variance to the front yard setback standard under Section 19.911. As required, the Planning Commission will review and issue a decision for the variance request.

Chapter 19.500: Supplementary Development Regulations

Section 19.504: Site Design Standards

19.504.1: Clear Vision Areas

A clear vision area shall be maintained on the corners of all property at the intersection of 2 streets or a street and a railroad according to the provisions of the clear vision ordinance in Chapter 12.24.

COMMENT:

The attached Preliminary Site Plan illustrates that access to the subject property is from an existing parking lot serving the Harmony Park Apartments, directly to the west of the site (see Exhibit 4). As required, the existing driveway access at the intersection and SE Harmony Road is currently maintained in accordance with Chapter 12.24.

19.504.3: Dual Use of Required Open Space

No lot area, yard, or other open space or off-street parking or loading area which is required by this title for one use shall be used to meet the required lot area, yard, or other open space or off-street parking area for another use, except as provided in Subsection 19.605.4.

COMMENT:

The submitted Preliminary Site Plan demonstrates that the required lot area, yard, vegetated area, and required off-street parking spaces for the proposed use are provided on the subject site (see Exhibit 4).

19.504.7: Minimum Vegetation

No more than 20% of the required vegetation area shall be covered in mulch or bark dust. Mulch or bark dust under the canopy of trees or shrubs is excluded from this limit. Plans for development shall include landscaping plans which shall be reviewed for conformance to this standard.

COMMENT:

As required, no more than 20% of the required vegetation area will be covered in mulch or bark dust. The City can ensure compliance with this standard through a condition of approval, and also when detailed plans are submitted for building permit review.

19.504.9: On-Site Walkways and Circulation

A. Requirement

All development subject to Chapter 19.700 (excluding single-family and multifamily residential development) shall provide a system of walkways that encourages safe and convenient pedestrian movement within and through the development site. Redevelopment projects that involve remodeling or changes in use shall be brought closer into conformance with this requirement to the greatest extent practicable. On-site walkways shall link the site with the public street sidewalk system. Walkways are required between parts of a site where the public is invited to walk. Walkways are

not required between buildings or portions of a site that are not intended or likely to be used by pedestrians, such as truck loading docks and warehouses.

COMMENT:

The applicant's Preliminary Site Plan identifies the location of 5-ft. wide concrete walkways which connect the proposed parking lot to the apartment building and the adjacent public sidewalk (see Exhibit 4).

B. Location

A walkway into the site shall be provided for every 300 ft. of street frontage.

COMMENT:

The submitted Existing Conditions Plan indicates that the subject site's frontage on SE Harmony Road is approximately 164 feet (see Exhibit 4). Since the applicant is proposing 2 walkway connections to SE Harmony Road, the above standard has been met.

C. Connections

Walkways shall connect building entrances to one another and building entrances to adjacent public streets and existing or planned transit stops. On-site walkways shall connect with walkways, sidewalks, bicycle facilities, alleys, and other bicycle or pedestrian connections on adjacent properties used or planned for commercial, multifamily, institutional, or park use. The City may require connections to be constructed and extended to the property line at the time of development.

COMMENT:

The attached Preliminary Site Plan demonstrates that the proposed walkways connect to the adjacent sidewalk along SE Harmony Road (see Exhibit 4). In addition, the walkways connect to the front and rear entrances of the proposed apartment building. There are no off-site pedestrian or bicycle facilities on adjacent properties, therefore the applicant is not proposing to extend walkways to those parcels.

D. Routing

Walkways shall be reasonably direct. Driveway crossings shall be minimized. Internal parking lot circulation and design shall provide reasonably direct access for pedestrians from streets and transit stops to primary buildings on the site.

COMMENT:

The submitted Preliminary Site Plan illustrates that the proposed walkways provide direct connections between the proposed apartment building, associated parking lot, and adjacent sidewalk along SW Harmony Road (see Exhibit 4).

E. Design Standards

Walkways shall be constructed with a hard surface material, shall be permeable for stormwater, and shall be no less than 5 ft. in width. If adjacent to a parking area where vehicles will overhang the walkway, a 7-ft-wide walkway shall be provided. The walkways shall be separated from parking areas and internal driveways using curbing, landscaping, or distinctive paving materials. On-site walkways shall be lighted to an average 5/10-footcandle level. Stairs or ramps shall be provided where necessary to provide a direct route.

COMMENT:

For maintenance purposes, the applicant is proposing to install concrete walkways between the proposed apartment building and parking lot. The submitted Preliminary Site Plan indicates that the proposed walkways will be separated from the parking area by a 6" curb (see Exhibit 4).

19.504.11: Preliminary Circulation Plan

A preliminary circulation plan is intended to guide site development by establishing a plan for multimodal access, connectivity, and circulation. A preliminary circulation plan is a conceptual plan, in that it does not establish a precise alignment for street, pedestrian, or bicycle facilities.

A. Applicability

A preliminary circulation plan is required for nonresidential development on sites 3 acres and larger that are subject to development review per Section 19.906 and where any of the following is true:

COMMENT:

The applicant is proposing a residential use for the 1.33 acre site. Therefore, a preliminary circulation plan is not required.

Section 19.505: Building Design Standards

19.505.3: Multifamily Housing

B. Applicability

The design elements in Table 19.505.3.D in this subsection apply, as described below, to all multifamily and congregate housing developments with 3 or more dwelling units on a single lot. Cottage cluster housing and rowhouses on their own lots are subject to separate standards and are therefore exempt from Subsection 19.505.3. Housing development that is on a single lot and emulates the style of cottage cluster housing or rowhouses is subject to the standards of this subsection.

1. All new multifamily or congregate housing development is subject to the design elements in this subsection.
2. The following design elements are applicable for work that would construct a new building or increase the floor area on the site by more than 1,000 sq. ft. Elements that are applicable only to additions do not apply to the site's existing development.
 - a. Subsection 19.505.3.D.1 Private Open Space, for the entire site.
 - b. Subsection 19.505.3.D.2 Public Open Space, for the entire site.
 - c. Subsection 19.505.3.D.5 Building Orientation and Entrances, only for additions or new buildings.
 - d. Subsection 19.505.3.D.6 Building Façade Design, only for additions or new buildings.
 - e. Subsection 19.505.3.D.7 Building Materials, only for additions or new buildings.
 - f. Subsection 19.505.3.D.8 Landscaping, for the entire site.
 - g. Subsection 19.505.3.D.9 Screening, only for additions or new buildings.
 - h. Subsection 19.505.3.D.11 Sustainability,

only for new buildings.

- i. **Subsection 19.505.3.D.12 Privacy Considerations, only for additions or new buildings.**
- j. **Subsection 19.505.3.D.13 Safety, only for additions or new buildings.**

COMMENT:

The proposed multi-family use contains more than 3 units. As required, this narrative addresses applicable design elements listed above.

D. Design Guidelines and Standards

Applicable guidelines and standards for multifamily and congregate housing are located in Table 19.505.3.D. These standards should not be interpreted as requiring a specific architectural style.

1. Private Open Space

COMMENT:

The attached Apartment Building Plans and Elevations indicate that all of the 1-bedroom and 2-bedroom dwelling units are provided private open space with a minimum dimension of 5-ft. and a minimum area of approximately 85 square feet (see Exhibit 4). As required, the proposed private space areas are directly accessible from the interior of the dwelling units and they are separate from common open space areas with railings. Since the studio unit is not provided private open space and ground floor units contain less than 96 sq. ft. of private open space, the applicant is requesting discretionary review of this design element. The attached Preliminary Site Plan illustrates that a common open space area with a pedestrian path, benches, and a picnic table has been provided in lieu of the required private space areas (see Exhibit 4). The plan illustrates that the common space amenities have been well designed, adequately sized, and functionally similar to private open space.

2. Public Open Space

COMMENT:

The public open space design standard for the 1.33 acre site requires the provision of a 5,793 sq. ft. common open space area. The attached Preliminary Site Plan indicates that the proposed common open space area on the south side of Minthorn Creek contains 7,383 sq. ft., maintains a 20-ft. width, and contains a variety of user amenities. Therefore, this design element meets the City's design standard.

3. Pedestrian Circulation

COMMENT:

The submitted Preliminary Site Plan illustrates that the proposed pedestrian circulation system provides direct connections between the apartment building, associated parking lot, and the adjacent sidewalk along SE Harmony Road (see Exhibit 4). A clear transition from the public realm to the ground floor units is provided by locating unit entrances within the building lobby, providing a railing around private open space areas, and locating landscape areas between walkways and the ground floor units. To reduce maintenance a cost, the applicant is proposing to construct the walkways with a concrete surface verses a permeable surface. The submitted Preliminary Site Plan indicates that the proposed walkways will be separated from the parking lot by a 6" curb for safety, and wheel stops will be installed to maintain a 5-ft. width for pedestrians (see Exhibit 4). The plan indicates that two walkway connections to the adjacent public sidewalk are proposed for the 164-ft. frontage along SE Harmony Road. Since the proposed walkways will be constructed with a concrete surface, the applicant is requesting discretionary review of this design element.

4. Vehicle and Bicycle Parking

COMMENT:

The attached Preliminary Site Plan demonstrates that the proposed parking lot is not located between the apartment building and SE Harmony Road, and the width of the parking lot is less than 50% of the road frontage (see Exhibit 4). The plan indicates that the proposed garage is located towards the rear of the structure. Therefore, the proposed vehicle parking has been integrated into the site so that it does not detract from the design of the building, or from the appearance of the site's street frontage. As such, the proposed vehicle parking meets the City's design standard.

According to the City of Portland's 2017 commute mode share study, only 6% of residents currently bike to work. To accommodate those apartment residents that own a bicycle, the attached Apartment Building Plans indicates that each tenant will have adequate space within their unit for one bicycle parking space (see Exhibit 4). The identified space on the plans is a logical location for prospective bicycle owners to store a bike since it is near the front door, and it is an out of the way location when traveling through the apartment unit. It is the applicant's experience that tenants prefer to safeguard their bicycle within their apartment in order to maximize security. For the majority of tenants who do not own a bicycle, the space identified on the Apartment Building Plans may be used for another purpose. The plans also indicate that additional short-term bicycle parking is provided with proposed bicycle racks in the basement and first floor lobby areas of the structure, where visitors can securely store and protect their bicycles from precipitation (see Exhibit 4). Therefore, the proposed bicycle parking meets the City's design standard.

5. Building Orientation & Entrances

COMMENT:

The attached Building Floor Plans and Elevations demonstrate that the primary entrance for the structure faces SE Harmony Road. The Preliminary Site Plan indicates that the primary entry also projects towards the right-of-way. In addition, the plan illustrates that the building is located within 20-ft. of the front lot line, and the building width exceeds 50% of the site's street frontage (see Exhibit 4). Therefore, this design element meets the City's design standard.

6. Building Façade Design

COMMENT:

The attached Building Elevations demonstrate that the proposed apartment façade design is compatible with existing apartment buildings in the Harmony Park Townhomes development, directly west of the site. The elevations indicate that the proposed structure incorporates a variety of trim elements and provides changes in materials to highlight the building's entrance, each floor of the structure, and provide overall visually interest. The elevations illustrate that the windows and doors will be inset within trim to provide depth, shadows, and expression to the building. As demonstrated by the front elevation, the placement of windows along the front elevation help to articulate the façade and allows resident visibility into the street.

The applicant's Building Elevations illustrate that most of the City's building façade design standards are met. While windows occupy less than 25% of the total street-facing façade, there are no blank windowless walls in excess of 750 square feet. The front elevation incorporates porches into the wall plane for all dwellings except for the studio unit. The elevations demonstrate that 1-ft. minimum projections are provided at 40-ft. or less along the primary façade. As required, the garage door will match the color palette for the rest of the building. Since the windows occupy less than 25% of the street façade, and the studio unit's wall plane is not divided in the elevation, the applicant is requesting discretionary review of this design element.

7. Building Materials

COMMENT:

When the applicant remodeled the older apartments directly west of the site and constructed the Harmony Park Apartments approximately 5 years ago, high quality material were used. This high quality project has shown that the buildings are still in excellent condition and have been able to stand up to northwest weather conditions. The adjacent apartment project and the attached plans provide evidence that the proposed apartment building will also be constructed with high quality materials like Hardi Board and stone veneer to provide a sense of permanence (see Exhibit 4).

The elevations demonstrate that the prohibited materials listed under the design standards of this section are not collectively used on any of the building facades. The attached Preliminary Site Plan indicates that 6-ft. high chain link fencing is proposed to be installed along the top of the retaining wall at the north end of the parking lot (see Exhibit 4). This type of fencing is proposed to provide fall protection adjacent to the retaining wall, while allowing unobscured surveillance of the common open space area. The proposed chain link fencing is adjacent to existing chain link fencing with sight obscuring slats directly to the west of the site. The Preliminary Site Plan also indicates that the applicant is proposing to install a 42" metal fence between the drive aisle and the sidewalk along SE Harmony Road. Both of the proposed fence types will be easily maintained, constructed of durable materials, and will be an attractive black color. Since chain link fencing is proposed on the site, the applicant is requesting discretionary review of this design element.

8. Landscaping

COMMENT:

The attached Interior Parking/WQR Planting Areas Plan demonstrates that mitigation plantings within the common open space area of VECO A1 will provide 35% canopy coverage within 5 years, and plantings in VECO A2 will provide 50% canopy coverage within 5 years (see Exhibit 4). The attached WQR Impacts/Tree Removal Plan identifies site areas and existing trees that are impacted by site grading, building and parking lot construction, and the installation of the public sidewalk improvements. Due to the constrained development area on the south side of Minthorn Creek, the applicant has preserved the existing trees to the extent possible. The submitted plan demonstrate that with the required interior and perimeter landscaping for the parking lot, and proposed plantings in the common area, the proposed hardscape areas will be adequately shaded.

The submitted Preliminary Site Plan and Water Quality Resource Site Assessment demonstrate that the development will preserve significantly more than 1 existing tree per 2,000 sq. ft. of site area on the north side of Minthorn Creek (see Exhibits 4 and 8). The attached Aerial Photograph/Land Use Plan indicates that the subject site and the adjacent parcel to the west are zoned R-2. To the east of the site is a MR-1 zoned parcel that is located within Clackamas County. To the south of the site across SE Harmony Road is a GI zoned parcel that is also located within Clackamas County. Directly north of the site is the Southern Pacific Railroad right-of-way, which is zoned R-5. The existing vegetation on the north side of Minthorn Creek provides a sight-obscuring screen along the rear property line. As such, this design element meets this City's design standard.

9. Screening

COMMENT:

The applicant is proposing to screen all required mechanical and communication equipment from the street, private open space areas, and common open space areas. As required, all building-mounted utilities will be located at least 5-ft. from the front entrance of the building. The attached Preliminary Site Plan indicates that the applicant is proposing to share an existing screened waste and recycling storage area with the adjacent Harmony Park Apartments development. Therefore, this design element meets the City's design standard.

10. Recycling Areas

COMMENT:

The attached Preliminary Site Plan indicates that an existing waste and recycling storage area is located within the adjacent Harmony Park Townhomes parking lot, directly west of the site (see Exhibit 4). The existing facility is currently accessed by residents through the parking lot and drive aisles, and the storage area is located approximately 190-ft. from the furthest apartment unit. To meet waste and recycling service provider access requirements, the applicant is proposing to share use of the existing recycling area with the proposed Harmony Park Townhomes PH II development. The submitted plans demonstrate that the proposed shared facility will be located approximately 270-ft. from the primary entrance of the new apartment building, with similar access provided through the parking lot and drive aisles, or residents may alternatively choose to use the public sidewalk along SE Harmony Road. The existing storage area includes weatherproof recycling containers which meet franchise collection service requirements and the design standards of this section. As such, this element meets the City's design standard.

11. Sustainability

COMMENT:

The attached Apartment Building Floor Plans and Elevations demonstrate that the proposed roof design does not preclude the use of solar panels (see Exhibit 3). When taking into account the site's considerable constraints, the building has been oriented to provide as much solar exposure as practicable. As required, the proposed windows will be operable by residents and will be provided with sun shades. Therefore, this design element meets the City's design standard.

12. Privacy Considerations

COMMENT:

The attached Preliminary Site Plan and Aerial Photograph/Land Use Plan demonstrate that there are no residential structures within 30-ft. of the proposed apartment building (see Exhibit 4). In addition, the Apartment Building Elevations demonstrate that the proposed balconies and interior access doors are oriented towards SE Harmony Road and the common area along Minthorn Creek. Therefore, only when looking towards the side of the balcony areas, can residents look towards the rear yards or living spaces of adjacent residential properties. Since a portion of the upper story balconies face the backyards of adjacent properties, the applicant is requesting discretionary review of this design element.

13. Safety

COMMENT:

The applicant's Apartment Building Floor Plans and Elevations demonstrate that the proposed development is consistent with the principals of Crime Prevention Through Environmental Design. The plans indicate that residents will be able to view the public sidewalk, parking lot, and the common open space area from various windows in the apartment units. The Preliminary Site Plan illustrates that access points to and from the apartment building are clearly defined by the proposed walkways, and the location of fencing and pathways will guide how people access the common open space area. By limiting the number of access points and clearly defining the common open space area, social control of shared spaces will be ensured. In addition, the building elevations illustrate that safety and surveillance will be enhanced by attached building lighting that illuminates the structure's entrances and walkway areas.

The attached Apartment Building Floor Plans indicate that at least 70% of the street frontage and common open space area will be viewed from 100% of the proposed units, all of which have living room windows that face the public spaces. As required, the proposed development will be illuminated in accordance with the standards of this section. Compliance with this standard can be verified by the City with a condition of approval and when detailed plans are submitted for building permit review. Therefore, this design element meets the City's design standard.

Chapter 19.600: Off-Street Parking and Loading

Section 19.604: General Parking Standards

19.604.1: Parking Provided with Development Activity

All required off-street parking areas shall be provided at the time the structure is built; at the time a structure or site is enlarged; or when there is change in use or an increase in density or intensity. All required off-street parking areas shall be provided in conformance with the standards of Chapter 19.600 prior to issuance of a certificate of occupancy, or final development permit approval, or as otherwise specified in any applicable land use decision.

COMMENT:

As required, the proposed off-street parking area will be constructed at the same time as the apartment building. This narrative illustrates how the parking area conforms to the standards of Chapter 19.600.

19.604.2: Parking Area Location

Accessory parking shall be located in one or more of the following areas:

- A. On the same site as the primary use for which the parking is accessory.**

COMMENT:

The attached Preliminary Site Plan indicates that all required off-street parking for the development will be provided on the subject site (see Exhibit 4).

19.604.3: Use of Parking Areas

All required off-street parking areas shall continually be available for the parking of operable vehicles of intended users of the site. Required parking shall not be rented, leased, sold, or otherwise used for parking that is unrelated to the primary or accessory use of the site, except where a shared parking agreement per Subsection 19.605.4 has been recorded. Subsection 19.604.3 does not prohibit charging fees for parking when the parking serves the primary or accessory uses on site.

COMMENT:

As required, the proposed parking stalls will not be rented, leased, or sold and will be continually available to the tenants of the proposed apartment building.

19.604.4: Storage Prohibited

No required off-street parking area shall be used for storage of equipment or materials, except as specifically authorized by Subsection 19.607.2 Commercial Vehicle, Pleasure Craft, and Recreational Vehicle Parking.

COMMENT:

The applicant is not proposing to store equipment or materials within the uncovered parking lot area. The proposed attached garage is not required to meet off-street parking requirements. The applicant plans to use the garage when storing equipment and materials for on-site landscaping and building maintenance projects.

Section 19.605: Vehicle Parking Quantity Requirements

The purpose of Section 19.605 is to ensure that development provides adequate, but not excessive, vehicle parking based on their estimated parking demand. Subsection 19.605.1 establishes parking ratios for common land uses, and Subsection 19.605.3 allows certain exemptions and reductions to these ratios based on location or on-site amenities. Modifications to the established parking ratios and determinations of parking requirements for unique land uses are allowed with discretionary review per Subsection 19.605.2.

Nonresidential development in the Downtown Mixed Use (DMU) and Open Space (OS) Zones is exempt from the requirements of Section 19.605.

COMMENT:

Required vehicle parking for the proposed multi-family use is listed under Table 19.605.1. The applicant is not requesting an exemption, reduction, or modification from these standards.

19.605.1: Minimum and Maximum Requirements

- A. Development shall provide at least the minimum and not more than the maximum number of parking spaces as listed in Table 19.605.1. Modifications to the standards in Table 19.605.1 may be made as per Section 19.605. Where multiple ratios are listed, the Planning Director shall determine which ratio to apply to the proposed development or use.**

COMMENT:

The applicant is proposing to develop a 15-unit apartment building with 11 two-bedroom units, 2 two-bedroom units, 3 one-bedroom units, and 1 studio unit. The studio and one-bedroom units are less than 800 sq. ft., while the two-bedroom units exceed 800 square feet. Per Table 19.605.1, the minimum number of parking spaces for the development is 18 spaces ((11 units x 1.25 spaces/unit) + (4 units x 1 space/unit) = 17.75, or 18 spaces). The maximum number of parking spaces for the development is 30 spaces ((11 units x 2 spaces/unit) + (4 units x 2 spaces/unit) = 30 spaces). The attached Preliminary Site Plan indicates that the applicant is proposing to develop 21 standard parking stalls, meeting the minimum and maximum parking requirements.

- E. Parking spaces for disabled persons, and other improvements related to parking, loading, and maneuvering for disabled persons, shall conform to the Americans with Disabilities Act and shall be subject to review and approval by the Building Official. Spaces reserved for disabled persons are included in the minimum required and maximum allowed number of off-street parking spaces.**

COMMENT:

The applicant's Preliminary Site Plan indicates that 1 van accessible parking stall is provided for the development in addition to the 21 standard parking stalls (see Exhibit 4). As demonstrated by the attached plans, the proposed van accessible parking stall meets ADA standards.

Section 19.606: Parking Area Design and Landscaping

The purpose of Section 19.606 is to ensure that off-street parking areas are safe, environmentally sound, aesthetically pleasing, and that they have efficient circulation. These standards apply to all types of development except for cottage clusters, rowhouses, duplexes, single-family detached dwellings, and residential homes.

COMMENT:

The applicant is proposing to develop a 15-unit apartment building on the subject site, therefore the standards of this section apply.

19.606.1: Parking Space and Aisle Dimensions

- A. The dimensions for required off-street parking spaces and abutting drive aisles, where required, shall be no less than in Table 19.606.1. The minimum dimensions listed in Table 19.606.1 are illustrated in Figure 19.606.1.**
- B. The dimension of vehicle parking spaces provided for**

disabled persons shall be according to federal and State requirements.

- C. Parking spaces shall be provided with adequate aisles or turnaround areas so that all vehicles may enter the street in a forward manner.
- D. Drive aisles shall be required in parking areas greater than 5 spaces. Drive aisles shall meet the minimum width standards of Subsection 19.606.1. Where a drive aisle or portion thereof does not abut a parking space(s), the minimum allowed width for a one-way drive aisle shall be 8 ft and the minimum allowed width for a two-way drive aisle shall be 16 ft.

COMMENT:

The attached Preliminary Civil Site Plan indicate that the proposed parking lot contains 9-ft. x 18-ft. standard parking stalls and the spaces are accessed at a 90 degree angle from a 22-ft. wide drive aisle (see Exhibit 4). The parking lot also contains 1 ADA parking stall which meets federal and State requirements. As required, the parking spaces and drive aisle allows vehicles to enter the street in a forward manner.

19.606.2: Landscaping

B. General Provisions

- 1. Parking area landscaping shall be required for the surface parking areas of all uses, except for cottage clusters, rowhouses, duplexes, and single-family detached dwellings. Landscaping shall be based on the standards in Subsections 19.606.2.C-E.
- 2. Landscaped areas required by Subsection 19.606.2 shall count toward the minimum amount of landscaped area required in other portions of Title 19.
- 3. Parking areas with 10 or fewer spaces in the Downtown Mixed Use Zone are exempt from the requirements of Subsection 19.606.2.

COMMENT:

Since the applicant is proposing to develop a multi-family residential use on the subject site, the landscape standards of this section apply.

C. Perimeter Landscaping

The perimeter landscaping of parking areas shall meet the following standards which are illustrated in Figure 19.606.2.C.

1. Dimensions

The minimum width of perimeter landscape areas are shown in Table 19.606.2.C.1. Where a curb provides the border for a perimeter landscape area, the dimension shall be measured from the inside of the curb(s). The Planning Director may reduce the required minimum width of a perimeter landscaping area where existing development or site constraints make it infeasible to provide drive aisles, parking spaces, and the perimeter landscaping buffer width listed in Table 19.606.2.C.1.

COMMENT:

Per Table 19.606.2.C.1, a perimeter landscape width of 8-ft. should be provided between the proposed parking area and the front lot line, and 6-ft. should be provided between the parking area and adjacent west property lines. As stated above, the review body may reduce the required width where site constraints make it unfeasible to provide the perimeter landscape buffer in Table 19.606.2.C.1. As discussed under the alternatives analysis of Section 19.402.12.A.4.a, site constraints include limited access from an Arterial Street, need to meet minimum density requirements, and requirement to protect natural resources on the property. Therefore, while the landscape standard is met for most of the parking lot perimeter, the landscaping standard is not met adjacent to the retaining wall in the northwest corner of the parking lot, or adjacent to the drive aisle in the southern portion of the site. As required, the variance to the landscape perimeter standards is addressed under Section 19.911.

2. Planting Requirements

Landscaping requirements for perimeter buffer areas shall include 1 tree planted per 40 lineal ft. of landscaped buffer area. Where the calculation of the number of trees does not result in a whole number, the result shall be rounded up to the next whole number. Trees shall be planted at evenly spaced intervals along the perimeter buffer to the greatest extent practicable. The remainder of the buffer area shall be grass, ground cover, mulch, shrubs, trees, or other landscape treatment other than concrete and pavement.

COMMENT:

As required, the landscaping perimeter will be planted in accordance with the above standards. The City can verify that these standards have been met through a condition of approval and when detailed plans are submitted for building permit review.

3. Additional Planting Requirements Adjacent to Residential Uses

In addition to the planting requirements of Subsection 19.606.2.D.2, all parking areas adjacent to a residential use shall have a continuous visual screen in the landscape perimeter area that abuts the residential use. The area of required screening is illustrated in Figure 19.606.2.C.3. The screen must be opaque throughout the year from 1 to 4 ft above ground to adequately screen vehicle lights. These standards must be met at the time of planting. Examples of acceptable visual screens are a fence or wall, an earth berm with plantings, and other plantings of trees and shrubs.

COMMENT:

As indicated by the attached Preliminary Site Plan, an existing 6-ft. high chain link fence with sight-obscuring slats is located around each private open space area in the adjacent Harmony Park Townhomes development (see Exhibit 4). Therefore, this adjacent residential use is currently screened from the proposed parking area.

D. Interior Landscaping

The interior landscaping of parking areas shall meet the following standards which are illustrated in Figure 19.606.2.D.

1. General Requirements

Interior landscaping of parking areas shall be provided for sites where there are more than 10 parking spaces on the entire site. Landscaping that is contiguous to a perimeter landscaping area and exceeds the minimum width required by Subsection 19.606.2.C.1 will be counted as interior landscaping if it meets all other requirements of Subsection 19.606.2.D.

2. Required Amount of Interior Landscaped Area

At least 25 sq. ft. of interior landscaped area must be provided for each parking space. Planting areas must be at least 120 sq. ft. in area and dispersed throughout the parking area.

COMMENT:

The attached Preliminary Site Plan indicates that the applicant is proposing to provide 21 standard parking stalls, 1 ADA stall, and 1 loading area stall within the parking lot (see Exhibit 4). Per the above standards, the 23 total parking stalls require 575 sq. ft. of interior landscaping (23 stalls x 25 sq. ft./stall = 575 sq. ft.). The attached Interior Parking/WQR Planting Areas Plan demonstrates that the proposed interior planting areas total 636 sq. ft., meeting the above standards.

3. Location and Dimensions of Interior Landscaped Areas

- a. Interior landscaped area shall be either a divider median between opposing rows of parking, or a landscape island in the middle or at the end of a parking row.
- b. Interior landscaped areas must be a minimum of 6 ft. in width. Where a curb provides the border for an interior landscape area, the dimension shall be measured from the inside of the curb(s).

COMMENT:

As permitted under 19.606.2.D.1., the proposed interior landscaping may be provided contiguous to required perimeter landscaping area when it exceeds the minimum width required by Subsection 19.606.2.C.1. As mentioned above, the applicant is proposing to provide 636 sq. ft. of interior landscaping area, meeting this standard.

4. Planting Requirements for Interior Landscaped Areas

- a. For divider medians, at least 1 shade or canopy tree must be planted for every 40 linear ft. Where the calculation of the number of trees does not result in a whole number, the result shall be rounded up to the next whole number. Trees shall be planted at evenly spaced intervals to the greatest extent practicable.
- b. For landscape islands, at least 1 tree shall

be planted per island. If 2 interior islands are located contiguously, they may be combined and counted as 2 islands with 2 trees planted.

- c. The remainder of any divider median or landscape island shall be grass, ground cover, mulch, shrubs, trees, or other landscape treatment other than concrete and pavement.

COMMENT:

As required, interior landscaping area will be planted in accordance with the above standards. The City can verify that these standards have been met through a condition of approval and when detailed plans are submitted for building permit review.

5. Additional Landscaping for Large Parking Areas

Parking areas with more than 100 spaces on a site shall not have more than 15 spaces in a row without providing an interior landscaped island. See Figure 19.606.2.D.5.

COMMENT:

The applicant is proposing to develop a parking lot with 23 total stalls, therefore these standards do not apply.

E. Other Parking Area Landscaping Provisions

- 1. Preservation of existing trees is encouraged in the off-street parking area and may be credited toward the total number of trees required, based on staff's review.
- 2. Installation of parking area landscaping shall be required before a certificate of occupancy is issued, unless a performance bond is posted with the City. Then landscaping shall be installed within 6 months thereafter or else the bond will be foreclosed and plant materials installed by the City.
- 3. Parking area landscaping shall be maintained in good and healthy condition.

COMMENT:

Due to required grading activities, existing trees cannot be incorporated into the development's parking area landscaping. As required, the parking lot landscaping will be installed before a certificate of occupancy for the apartment building is issued and the landscaping will be maintained in accordance with City standards.

- 4. Required parking landscaping areas may serve as stormwater management facilities for the site. The Engineering Director has the authority to review and approve the design of such areas for conformance with the Public Works Standards. This allowance does not exempt the off-street parking landscape area from meeting the design or planting standards of Subsection 19.606.2.**

COMMENT:

As indicated by the attached Preliminary Utility Plan, the applicant is not proposing to use required landscaped areas for stormwater management facilities (see Exhibit 4).

- 5. Pedestrian walkways are allowed within perimeter and interior landscape buffer if the landscape buffer is at least 2 ft. wider than required in Subsections 19.606.2.C.1 and 19.606.2.D.3.b.**

COMMENT:

The attached Preliminary Site Plan demonstrates that no walkways will be provided within the proposed perimeter landscaping areas. The Interior Parking/WQR Planting Areas Plan indicates that while walkways on the east side of the parking lot are located adjacent to the proposed interior landscaping areas, the landscape buffer exceeds the minimum width by at least 2 feet (see Exhibit 4).

19.606.3: Additional Design Standards

A. Paving and Striping

Paving and striping are required for all required maneuvering and standing areas. Off-street parking areas shall have a durable and dust-free hard surface, shall be maintained for all-weather use, and shall be striped to show delineation of parking spaces and directional markings for driveways and accessways. Permeable paving surfaces may be used to reduce surface water runoff and protect water quality.

COMMENT:

The proposed off-street parking lot will be constructed with an asphalt surface. As required, the parking lot will be striped to delineate parking spaces and directional markings.

B. Wheel Stops

Parking bumpers or wheel stops, of a minimum 4-in height, shall be provided at parking spaces to prevent vehicles from encroaching on the street right-of-way, adjacent landscaped areas, or pedestrian walkways. Curbing may substitute for wheel stops if vehicles will not encroach into the minimum required width for landscape or pedestrian areas.

COMMENT:

The submitted Preliminary Site Plan indicates that all parking stalls will be provided with wheel stops meeting the standards of this section (see Exhibit 4). Therefore, parked vehicles will be prevented from encroaching into the adjacent pedestrian walkways and landscaped areas.

C. Site Access and Drive Aisles

- 1. Accessways to parking areas shall be the minimum number necessary to provide access while not inhibiting the safe circulation and carrying capacity of the street. Driveway approaches shall comply with the access spacing standards of Chapter 12.16.**
- 2. Drive aisles shall meet the dimensional requirements in Subsection 19.606.1.**
- 3. Parking drive aisles shall align with the approved driveway access and shall not be wider than the approved driveway access within 10 ft. of the right-of-way boundary.**
- 4. Along collector and arterial streets, no parking space shall be located such that its maneuvering area is in an ingress or egress aisle within 20 ft. of the back of the sidewalk, or from the right-of-way boundary where no sidewalk exists.**
- 5. Driveways and on-site circulation shall be designed so that vehicles enter the right-of-way in a forward motion.**

COMMENT:

As illustrated by the attached Preliminary Site Plan, the proposed transportation facilities have been designed to address the needs of the proposed apartment building (see Exhibit 4). As demonstrated by the attached Preliminary Site Plan, the site fronts SE Harmony Road, which is designated as an Arterial Street and is under Clackamas County jurisdiction. Due to this roadway's 600-ft. access spacing standard, the applicant is proposing to use an existing driveway and access easement at 5989 SE Harmony Road when providing access to the subject site. The proposed accessway between the two properties is 20-ft. wide, and the proposed aisle within the parking lot is 22-ft. wide. The submitted Preliminary Site Plan demonstrates that on-site circulation allows vehicles to enter SE Harmony Road in a forward motion. Due to the location of the access easement and existing development at 5989 SE Harmony Road, the drive aisle must be located less than 20-ft. from the sidewalk along SE Harmony Road. As such, given access constraints for the site, the proposed drive aisles and parking area meet the above standards to the extent practicable.

D. Pedestrian Access and Circulation

Subsection 19.504.9 establishes standards that are applicable to an entire property for on-site walkways and circulation. The purpose of Subsection 19.606.3.D is to provide safe and convenient pedestrian access routes specifically through off-street parking areas. Walkways required by Subsection 19.606.3.D are considered part of the on-site walkway and circulation system required by Subsection 19.504.9.

- 1. Pedestrian access shall be provided for off-street parking areas so that no parking space is further than 100 ft. away, measured along vehicle drive aisles, from a building entrance, or a walkway that meets the standards of Subsection 19.606.3.D.2.**
- 2. Walkways through off-street parking areas must be continuous, must lead to a building entrance, and meet the design standards of Subsection 19.504.9.E.**

COMMENT:

The attached Preliminary Site Plan indicates that all proposed off-street parking spaces are located less than 100-ft. from the building entrances (see Exhibit 4). The plan also demonstrates that the proposed walkways provide continuous pedestrian connections from the parking lot to the building entrances.

E. Internal Circulation

1. General Circulation

The Planning Director has the authority to

review the pedestrian, bicycle, and vehicular circulation of the site and impose conditions to ensure safe and efficient on-site circulation. Such conditions may include, but are not limited to, on-site signage, pavement markings, addition or modification of curbs, and modifying drive aisle dimensions.

2. Connections to Adjacent Parking Areas

Where feasible, parking areas shall be designed to connect with parking areas on adjacent sites to eliminate the use of the street for cross movements.

COMMENT:

The submitted Preliminary Site Plan demonstrates that the proposed pedestrian, bicycle, and vehicular facilities provide safe and efficient on-site circulation (see Exhibit 4). The plan also indicates that access is provided between the subject site and the adjacent Harmony Park Townhomes to eliminate the use of SE Harmony Road for cross movements.

3. Drive-Through Uses and Queuing Areas

The following standards apply to uses with drive-through services and uses such as gas stations and quick vehicle service facilities where vehicles queue rather than park on the site. The Planning Director has the authority to determine when the standards apply to a proposed use.

COMMENT:

The proposed use does not include a drive-through service, therefore these standards do not apply.

F. Lighting

Lighting is required for parking areas with more than 10 spaces. The Planning Director may require lighting for parking areas of less than 10 spaces if the parking area would not be safe due to the lack of lighting. Lighting shall be designed to enhance safe access for vehicles and pedestrians on the site, and shall meet the following standards:

- 1. Lighting luminaires shall have a cutoff angle of 90 degrees or greater to ensure that lighting is directed toward the parking surface.**

2. **Parking area lighting shall not cause a light trespass of more than 0.5 footcandles measured vertically at the boundaries of the site.**
3. **Pedestrian walkways and bicycle parking areas in off-street parking areas shall have a minimum illumination level of 0.5 footcandles, measured horizontally at the ground level.**
4. **Where practicable, lights shall be placed so they do not shine directly into any WQR and/or HCA location. The type, size, and intensity of lighting shall be selected so that impacts to habitat functions are minimized.**

COMMENT:

As demonstrated by the attached Apartment Building Elevations, lighting will be provided for the proposed parking lot to adequately illuminate the parking spaces and pedestrian walkways leading to the building entrances. As required, the lighting will have a minimum cutoff angle of 90 degrees to ensure that light is directed downward and away from adjacent properties and the WQR. The City can verify that the lighting standard will be met through a condition of approval and when detail plans are submitted for building permit review.

Section 19.607: Off-Street Parking Standards for Residential Areas

19.607.1: Residential Driveways and Vehicle Parking Areas

Subsection 19.607.1 is intended to preserve residential neighborhood character by establishing off-street parking standards. The provisions of Subsection 19.607.1 apply to passenger vehicles and off-street parking areas for rowhouses, cottage clusters, duplexes, single-family detached dwellings, and residential homes in all zones, unless specifically stated otherwise.

COMMENT:

Since the applicant is proposing to develop a 15-unit apartment building on the subject site, these off-street parking standards do not apply.

19.607.2: Commercial Vehicle, Pleasure Craft, and Recreational Vehicle Parking

Subsection 19.607.2 is intended to preserve residential neighborhood character by minimizing the impacts created by the parking and storing of commercial vehicles, pleasure crafts, and recreational vehicles. The standards of Subsection 19.607.2 apply to off-street parking areas for

cottage clusters, rowhouses, duplexes, single-family detached dwellings, and residential homes in all zones.

COMMENT:

The applicant is not proposing to park or store commercial vehicles, pleasure craft, or recreational vehicles on the subject site. Therefore, these standards do not apply.

Section 19.608: Loading

19.608.1: General Provisions

- A. The purpose of off-street loading areas is to contain loading activity of goods on-site and avoid conflicts with travel in the public right-of-way; provide for safe and efficient traffic circulation on the site; and minimize the impacts of loading areas to surrounding properties.**
- B. Off-street loading areas may be required for commercial, industrial, public, and semipublic uses for the receipt or distribution of merchandise, goods, or materials by vehicles. Off-street loading is not required in the Downtown Mixed Use Zone.**

COMMENT:

The applicant is proposing to develop a multi-family residential use on the site, therefore off-street loading standards do not apply under this section.

19.608.2: Number of Loading Spaces

The Planning Director shall determine whether to require off-street loading for commercial, industrial, public, and semipublic uses. The ratios listed below should be the minimum required unless the Planning Director finds that a different number of loading spaces are needed upon reviewing the loading needs of a proposed use.

A. Residential Buildings

Buildings where all of the floor area is in residential use should meet the following standards:

- 1. Fewer than 50 dwelling units on a site that abuts a local street: no loading spaces required.**
- 2. All other buildings: 1 loading space.**

COMMENT:

Since the subject site abuts SE Harmony Road, an Arterial Street, 1 loading space is required. The attached Preliminary Site Plan indicates that one loading space will be developed with the proposed parking lot (see Exhibit 4).

19.608.3: Loading Space Standards

- A. Loading spaces shall be at least 35 ft. long and 10 ft. wide, and shall have a height clearance of at least 13 ft.**
- B. Loading areas shall be provided on the site and be separate from parking spaces.**
- C. Off-street loading areas shall have a durable and dust-free hard surface. Permeable paving surfaces may be used to reduce surface water runoff and protect water quality.**
- D. Lighting of loading areas shall conform to the standards of Subsection 19.606.3.F.**
- E. Off-street loading areas for materials and merchandise shall be located outside of the minimum front and side yard requirements for structures.**
- F. Off-street loading areas shall be located where not a hindrance to drive aisles, walkways, public or private streets, or adjacent properties.**

COMMENT:

The attached Preliminary Site Plan indicates that the proposed loading space is 10-ft. x 35-ft. with necessary clearance, and the space located adjacent to the proposed garage (see Exhibit 4). The plan also indicates that the loading space will be provided with an asphalt surface and is located outside of required yard areas. The submitted Apartment Building Elevations indicate that adequate lighting will be provided for the loading area. As required, the proposed loading area is not located where it will be a hindrance to drive aisles, walkways, streets, or adjacent properties.

Section 19.609: Bicycle Parking

19.609.1: Applicability

Bicycle parking shall be provided for all new commercial, industrial, community service use, and multifamily residential development. Temporary and seasonal uses (e.g., fireworks and Christmas tree stands) and storage

units are exempt from Section 19.609. Bicycle parking shall be provided in the Downtown Mixed Use Zone and at transit centers.

COMMENT:

The applicant is proposing a multi-family residential use for the subject property, therefore bicycle parking standards apply to the development.

19.609.2: Quantity of Spaces

- A. The quantity of required bicycle parking spaces shall be as described in this subsection. In no case shall less than 2 spaces be provided.**
 - 1. Unless otherwise specified, the number of bicycle parking spaces shall be at least 10% of the minimum required vehicle parking for the use.**
 - 2. The number of bicycle parking spaces at transit centers shall be provided at the ratio of at least 1 space per 100 daily boardings.**
 - 3. Multifamily residential development with 4 or more units shall provide 1 space per unit.**

COMMENT:

The applicant is proposing to construct a 15-unit apartment building on the subject site, therefore a minimum of 15 bicycle parking spaces are required for the development. The attached Apartment Building Floor Plans indicate that one bicycle parking space is provided in each apartment unit. Additional short-term bicycle parking is provided with proposed bicycle racks in the basement and first floor lobby areas of the structure, where visitors can securely store and protect their bicycles from precipitation (see Exhibit 4). As required, the 15 proposed bicycle parking spaces exceeds the amount required by Section 19.609.2(A)(1).

- B. Covered or enclosed bicycle parking. A minimum of 50% of the bicycle spaces shall be covered and/or enclosed (in lockers or a secure room) in any of the following situations:**
 - 1. When 10% or more of vehicle parking is covered.**
 - 2. If more than 10 bicycle parking spaces are required.**
 - 3. Multifamily residential development with 4 or more units.**

COMMENT:

The attached Apartment Building Floor Plans indicate that 100% of the required bicycle parking spaces will be covered within individual units in the apartment building (see Exhibit 4).

19.609.3: Space Standards and Racks

- A. The dimension of each bicycle parking space shall be a minimum of 2 x 6 ft. A 5-ft-wide access aisle must be provided. If spaces are covered, 7 ft. of overhead clearance must be provided. Bicycle racks must be securely anchored and designed to allow the frame and 1 wheel to be locked to a rack using a high security, U-shaped, shackle lock.**
- B. Lighting shall conform to the standards of Subsection 19.606.3.F.**

COMMENT:

The Apartment Building Floor Plans include a detail which demonstrates that the required bicycle parking space dimensions and access aisle dimension will be met. As required, the proposed bicycle racks in the basement and first floor lobbies will be anchored. In addition, lighting will conform to the above standards.

19.609.4: Location

- A. Bicycle parking facilities shall meet the following requirements:**
 - 1. Located within 50 ft. of the main building entrance.**
 - 2. Closer to the entrance than the nearest non-ADA designated vehicle parking space.**
 - 3. Designed to provide direct access to a public right-of-way.**
 - 4. Dispersed for multiple entrances.**
 - 5. In a location that is visible to building occupants or from the main parking lot.**
 - 6. Designed not to impede pedestrians along sidewalks or public rights-of-way.**
 - 7. Separated from vehicle parking areas by curbing or other similar physical barriers.**

COMMENT:

The attached Apartment Building Floor Plans indicate that each tenant will have a designated area in their unit for one bicycle parking space. Additional short-term bicycle parking is provided with proposed bicycle racks in the basement and first floor lobby areas of the structure, where visitors can securely store and protect their bicycles from precipitation (see Exhibit 4). As such, available bicycle parking spaces are dispersed at multiple entrances, closer than the designated ADA vehicle parking space, in a location that is visible to building occupants, and are separated from the proposed vehicle parking area. The submitted plans demonstrate that both building entrances provide access to a public right-of-way, and the proposed bicycle parking areas are located where they will not impede pedestrian travel along a sidewalk or public right-of-way.

- B. The public right-of-way may be utilized for bicycle parking when parking cannot be reasonably accommodated on the site and the location is convenient to the building's front entrance. The bicycle parking area in the right-of-way must leave a clear, unobstructed width of sidewalk that meets the Engineering Department's Public Works Standards for sidewalk passage. See Figure 19.609 for illustration of space and locational standards. A right-of-way permit is required.**

COMMENT:

The applicant is not proposing to locate bicycle parking in a public right-of-way, therefore these standards do not apply.

Section 19.610: Carpool and Vanpool Parking

19.610.1: Applicability

New industrial, institutional, and commercial development with 20 or more required parking spaces shall provide carpool/vanpool parking.

COMMENT:

The applicant is proposing to develop a multi-family use on the subject site, therefore these standards do not apply.

Section 19.611: Parking Structures

The purpose of Section 19.611 is to regulate the design and location of structured parking, and to provide appropriate incentives for the provision of structured parking. Structured parking is allowed to accommodate parking that is required for a specific use, or as a parking facility that is a use by itself.

COMMENT:

The applicant is not proposing to develop a parking structure on the subject site, therefore these standards do not apply.

Chapter 19.700: Public Facility Improvements

Section 19.702: Applicability

19.702.1: General

Chapter 19.700 applies to the following types of development in all zones:

D. New construction.

COMMENT:

The applicant is proposing new construction on the subject site, therefore public facility improvement standards apply to the development.

Section 19.703: Review Process

19.703.1: Preapplication Conference

For all proposed development that requires a land use application and is subject to Chapter 19.700 per Section 19.702, the applicant shall schedule a preapplication conference with the City prior to submittal of the land use application. The Engineering Director may waive this requirement for proposals that are not complex.

COMMENT:

As required, the applicant held a Pre-Application Conference with City staff to discuss the proposed development on November 2, 2017. A copy of the City Pre-Application Conference Report has been attached to this application (see Exhibit 3).

19.703.2: Application Submittal

For all proposed development that is subject to Chapter 19.700 per Section 19.702, one of the following types of applications is required.

A. Development Permit Application

If the proposed development does not require a land use application, compliance with Chapter 19.700 will

be reviewed as part of the development permit application submittal.

COMMENT:

As discussed above, the proposed 15-unit apartment building requires the approval of a Development Review land use application.

B. Transportation Facilities Review (TFR) Land Use Application

COMMENT:

The attached City Pre-Application Conference Report indicates that a TIS is not required for this land use application. Therefore, a TFR land use application is not required with this review process.

19.703.3: Approval Criteria

For all proposed development that is subject to Chapter 19.700 per Section 19.702, the required development permit and/or land use application shall demonstrate compliance with the following approval criteria at the time of submittal.

A. Procedures, Requirements, and Standards

Development and related public facility improvements shall comply with procedures, requirements, and standards of Chapter 19.700 and the Public Works Standards.

COMMENT:

As required, this narrative and the attached exhibits address how the proposed development complies with Public Works Standards and Chapter 19.700 requirements.

B. Transportation Facility Improvements

Development shall provide transportation improvements and mitigation at the time of development in rough proportion to the potential impacts of the development per Section 19.705 Rough Proportionality, except as allowed by Chapter 13.32 Fee in Lieu of Construction.

Development in downtown zones that is exempt per Subsection 19.702.3.B shall only be required to provide transportation improvements that are identified by a Transportation Impact Study as

necessary to mitigate the development's transportation impacts. Such development is not required to provide on-site frontage improvements.

COMMENT:

City and County staff have reviewed the applicant's proposal, determined rough proportionality for transportation improvements based on potential impacts, and defined the required improvements in the City Pre-Application Conference Report (see Exhibit 3).

C. Safety and Functionality Standards

The City will not issue any development permits unless the proposed development complies with the City's basic safety and functionality standards, the purpose of which is to ensure that development does not occur in areas where the surrounding public facilities are inadequate. Upon submittal of a development permit application, an applicant shall demonstrate that the development property has or will have all of the following:

1. Adequate street drainage, as determined by the Engineering Director.
2. Safe access and clear vision at intersections, as determined by the Engineering Director.
3. Adequate public utilities, as determined by the Engineering Director.
4. Access onto a public street with the minimum paved widths as stated in Subsection 19.703.3.C.5 below.

COMMENT:

The attached Preliminary Development Plans illustrate required transportation improvements and how adequate street drainage is provided. The submitted Preliminary Civil Site Plan demonstrates that safe access and clear vision will be provided with the proposed development. The plan also illustrates that access to the proposed development will be provided from a public street that currently meets the minimum paved width standard.

5. Adequate frontage improvements as follows:
 - a. For local streets, a minimum paved width of 16 ft. along the site's frontage.
 - b. For nonlocal streets, a minimum paved width of 20 ft. along the site's frontage.

- c. For all streets, a minimum horizontal right-of-way clearance of 20 ft. along the site's frontage.

COMMENT:

The attached Existing Conditions Plan demonstrates that the existing pavement width of SE Harmony Road exceeds 16-ft. along the site's frontage (see Exhibit 4). The applicant's Preliminary Grading Plan indicates that the existing trees along the site's frontage will be removed to accommodate the required sidewalk improvements. Therefore, a minimum right-of-way clearance of 20-ft. will be provided along the site's frontage.

- 6. Compliance with Level of Service D for all intersections impacted by the development, except those on Oregon Highway 99E that shall be subject to the following:
 - a. Level of Service F for the first hour of the morning or evening 2-hour peak period.
 - b. Level of Service E for the second hour of the morning or evening 2-hour peak period.

COMMENT:

The attached City Pre-Application Conference Report indicates that the proposed development will not significantly impact transportation facilities in the vicinity of the subject site. Therefore, Level of Service standards are not required to be evaluated by the applicant.

Section 19.704: Transportation Impact Evaluation

The Engineering Director will determine whether a proposed development has impacts on the transportation system by using existing transportation data. If the Engineering Director cannot properly evaluate a proposed development's impacts without a more detailed study, a transportation impact study (TIS) will be required to evaluate the adequacy of the transportation system to serve the proposed development and determine proportionate mitigation of impacts. The TIS determination process and requirements are detailed below.

COMMENT:

The attached City Pre-Application Conference Report indicates that a TIS is not required for this land use application (see Exhibit 3).

Section 19.708: Transportation Facility Requirements

19.708.1: General Street Requirements and Standards

A. Access Management

All development subject to Chapter 19.700 shall comply with access management standards contained in Chapter 12.16.

COMMENT:

As mentioned above, SE Harmony Road is classified as an Arterial Street. Per the TSP, the minimum access spacing for arterial streets is 600 feet. To meet this spacing standard, the applicant is proposing to use the existing driveway and access easement at 5989 SE Harmony Road when providing access to the subject site.

B. Clear Vision

All development subject to Chapter 19.700 shall comply with clear vision standards contained in Chapter 12.24.

COMMENT:

As required, the existing driveway intersection with SE Harmony Road on the adjacent property to the west currently meets clear vision standards of this section.

D. Development in Non-Downtown Zones

Development in a non-downtown zone that has frontage on a street section shown in the PAR is subject to the requirements of the Milwaukie Public Works Standards, which implements the street design standards and right-of-way dedication requirements contained in the PAR for that street frontage. The following general provisions apply only to street frontages that are not shown in the PAR and for development that is not in any of the downtown zones listed in Subsection 19.708.1.C above:

1. Streets shall be designed and improved in accordance with the standards of this chapter and the Public Works Standards. ODOT facilities shall be designed consistent with State and federal standards. County facilities shall be designed consistent with County standards.

2. **Streets shall be designed according to their functional classification per Figure 8-3b of the TSP.**

COMMENT:

The subject site fronts SE Harmony Road, which is classified as an Arterial Street and is under Clackamas County jurisdiction. The attached Preliminary Civil Site Plan indicates that the proposed street frontage improvements are consistent with the City Pre-Application Conference Report (see Exhibit 4). This report includes County standards for the required street frontage improvements (see Exhibit 3).

3. **Street right-of-way shall be dedicated to the public for street purposes in accordance with Subsection 19.708.2. Right-of-way shall be dedicated at the corners of street intersections to accommodate the required turning radii and transportation facilities in accordance with Section 19.708 and the Public Works Standards. Additional dedication may be required at intersections for improvements identified by the TSP or a required transportation impact study.**
4. **The City shall not approve any development permits for a proposed development unless it has frontage or approved access to a public street.**

COMMENT:

To provide a minimum of 0.50-ft. between the back of sidewalk and the front property line, the applicant is proposing to dedicate additional right-of-way along the site's SE Harmony Road frontage (see Exhibit 4). As mentioned above, the applicant is proposing site access through the existing parking lot to the west of the subject property.

5. **Off-site street improvements shall only be required to ensure adequate access to the proposed development and to mitigate for off-site impacts of the proposed development.**

COMMENT:

The attached Preliminary Site Plan indicates that the access drive improvements extend off-site to the west of the subject property (see Exhibit 4). The attached City Pre-Application Conference Report does not identify required off-site street improvements for the proposed development (see Exhibit 3).

6. **The following provisions apply to all new public streets and extensions to existing public streets.**

COMMENT:

The applicant is not proposing to establish a new street or extend an existing street, therefore these standards do not apply.

- 7. Traffic calming may be required for existing or new streets. Traffic calming devices shall be designed in accordance with the Public Works Standards or with the approval of the Engineering Director.**

COMMENT:

Due to minimal traffic impacts associated with the proposed use, no traffic calming requirements are identified in the attached City Pre-Application Conference Report (see Exhibit 3).

- 8. Railroad Crossings**

Where anticipated development impacts trigger a need to install or improve a railroad crossing, the cost for such improvements may be a condition of development approval.

COMMENT:

As stated above, no off-site transportation improvements are required in the attached City Pre-Application Conference Report (see Exhibit 3).

- 9. Street Signs**

The City shall install all street signs, relative to traffic control and street names, as specified by the Engineering Director. The applicant shall reimburse the City for the cost of all such signs installed by the City.

COMMENT:

As required, the applicant will reimburse the City for all installed street signs associated with the proposed development.

- 10. Streetlights**

The location of streetlights shall be noted on approved development plans. Streetlights shall be installed in accordance with the Public Works Standards or with the approval of the Engineering Director.

COMMENT:

The attached Existing Conditions Plan indicates that there are no existing or proposed streetlights along the site's frontage on SE Harmony Road (see Exhibit 4).

E. Street Layout and Connectivity

COMMENT:

The applicant is not proposing to subdivide the subject property or create a new street with this application. Therefore, these standards do not apply.

F. Intersection Design and Spacing

COMMENT:

There are no connecting street intersections associated with the proposed development. Therefore, these standards do not apply.

19.708.2: Street Design Standards

Table 19.708.2 contains the street design elements and dimensional standards for street cross sections by functional classification. Dimensions are shown as ranges to allow for flexibility in developing the most appropriate cross section for a given street or portion of street based on existing conditions and the surrounding development pattern. The additional street design standards in Subsection 19.708.2.A augment the dimensional standards contained in Table 19.708.2. The Engineering Director will rely on Table 19.708.2 and Subsection 19.708.2.A to determine the full-width cross section for a specific street segment based on functional classification. The full-width cross section is the sum total of the widest dimension of all individual street elements. If the Engineering Director determines that a full-width cross section is appropriate and feasible, a full-width cross section will be required. If the Engineering Director determines that a full-width cross section is not appropriate or feasible, the Engineering Director will modify the full-width cross section requirement using the guidelines provided in Subsection 19.708.2.B. Standards for design speed, horizontal/vertical curves, grades, and curb return radii are specified in the Public Works Standards.

COMMENT:

As mentioned above, SE Harmony Road is under Clackamas County jurisdiction. The attached Pre-Application Conference Report includes County comments regarding required street frontage improvements along SE Harmony Road (see Exhibit 3). The attached Preliminary Civil Site Plan demonstrates that the applicant is proposing to install street frontage improvements consistent with these standards (see Exhibit 4).

A. Additional Street Design Standards

These standards augment the dimensional standards contained in Table 19.708.2 and may increase the width of an individual street element and/or the full-width right-of-way dimension.

- 1. Minimum 10-ft travel lane width shall be provided on local streets with no on-street parking.**
- 2. Where travel lanes are next to a curb line, an additional 1 ft. of travel lane width shall be provided. Where a travel lane is located between curbs, an additional 2 ft. of travel lane width shall be provided.**
- 3. Where shared lanes or bicycle boulevards are planned, up to an additional 6 ft. of travel lane width shall be provided.**
- 4. Bike lane widths may be reduced to a minimum of 4 ft. where unusual circumstances exist, as determined by the Engineering Director, and where such a reduction would not result in a safety hazard.**

COMMENT:

The site fronts SE Harmony Street, which is classified as an Arterial Street and is under Clackamas County jurisdiction. The existing pavement width of SE Harmony Road adjacent to the subject site is approximately 35 feet, providing two 11.5-ft. travel lanes and 6-ft. bicycle lanes. As indicated by the attached City Pre-Application Conference Report, the existing street design meets County standards (see Exhibit 3).

- 5. Where a curb is required by the Engineering Director, it shall be designed in accordance with the Public Works Standards.**
- 6. Center turn lanes are not required for truck and bus routes on street classifications other than arterial roads.**

COMMENT:

As indicated by the attached Existing Conditions Plan, SE Harmony Road is currently improved with curbs on both sides of the roadway (see Exhibit 4). The attached City Pre-Application Conference Report indicates that a center turn lane is not warranted for the proposed use (see Exhibit 3).

7. **On-street parking in industrial zones shall have a minimum width of 8 ft.**
8. **On-street parking in commercial zones shall have a minimum width of 7 ft.**
9. **On-street parking in residential zones shall have a minimum width of 6 ft.**

COMMENT:

SE Harmony Road is currently signed for no parking on both sides of the street along the site's frontage. Therefore, these standards do not apply.

10. **Sidewalk widths may be reduced to a minimum of 4 ft. for short distances for the purpose of avoiding obstacles within the public right-of-way including, but not limited to, trees and power poles.**
11. **Landscape strip widths shall be measured from back of curb to front of sidewalk.**
12. **Where landscape strips are required, street trees shall be provided a minimum of every 40 ft. in accordance with the Public Works Standards and the Milwaukie Street Tree List and Street Tree Planting Guidelines.**

COMMENT:

The attached Preliminary Civil Site Plan indicates that the existing 4.5-ft. curbtight sidewalk will be removed. The existing sidewalk will be replaced with a 6-ft. sidewalk, which will be separated from the curb by a 5-ft. landscape strip (see Exhibit 4). As required, street trees are proposed to be installed along the site's frontage.

13. **Where water quality treatment is provided within the public right-of-way, the landscape strip width may be increased to accommodate the required treatment area.**

COMMENT:

The attached Preliminary Utility Plan indicates that water quality treatment will occur on-site, therefore this standard does not apply (see Exhibit 4).

14. **A minimum of 6 in. shall be required between a property line and the street element that abuts it; e.g., sidewalk or landscape strip.**

COMMENT:

As indicated on the attached Preliminary Site Plan, the applicant is proposing to dedicate additional right-of-way along SE Harmony Road to provide a minimum of 6-in. between the sidewalk and right-of-way (see Exhibit 4).

B. Street Design Determination Guidelines

The Engineering Director shall make the final determination regarding right-of-way and street element widths using the ranges provided in Table 19.708.2 and the additional street design standards in Subsection 19.708.2.A. The Engineering Director shall also determine whether any individual street element may be eliminated on one or both sides of the street in accordance with Figure 10-1 of the TSP. When making a street design determination that varies from the full-width cross section, the Engineering Director shall consider the following:

1. **Options and/or needs for environmentally beneficial and/or green street designs.**
2. **Multimodal street improvements identified in the TSP.**
3. **Street design alternative preferences identified in Chapter 10 of the TSP, specifically regarding sidewalk and landscape strip improvements.**
4. **Existing development pattern and proximity of existing structures to the right-of-way.**
5. **Existing right-of-way dimensions and topography.**

COMMENT:

The proposed street frontage improvements to SE Harmony Road are based on comments received from City and County staff in the attached City Pre-Application Conference Report (see Exhibit 3). As required, all of the factors listed above were considered by staff when determining the required improvements.

19.708.3: Sidewalk Requirements and Standards

B. Sidewalk Requirements

1. Requirements

Sidewalks shall be provided on the public street frontage of all development per the requirements of this chapter. Sidewalks shall generally be constructed within the dedicated public right-of-way, but may be located outside of the right-of-way within a public easement with the approval of the Engineering Director.

2. Design Standards

Sidewalks shall be designed and improved in accordance with the requirements of this chapter and the Public Works Standards.

3. Maintenance

Abutting property owners shall be responsible for maintaining sidewalks and landscape strips in accordance with Chapter 12.04.

COMMENT:

In conformance with the attached City Pre-Application Conference Report, the applicant is proposing to install a 6-ft. wide sidewalk along the site's SE Harmony Road frontage (see Exhibit 3). As required, the proposed sidewalk will be located within the right-of-way, and on-going maintenance will be provided by the property owner.

19.708.4: Bicycle Facility Requirements and Standards

B. Bicycle Facility Requirements

1. Requirements

Bicycle facilities shall be provided in accordance with this chapter, Chapter 19.600, the TSP, and the Milwaukie Downtown and Riverfront Plan: Public Area Requirements. Requirements include, but are not limited to, parking, signage, pavement markings, intersection treatments, traffic calming, and traffic diversion.

2. Timing of Construction

To assure continuity and safety, required bicycle facilities shall generally be constructed at the time of development. If not practical to sign, stripe, or construct bicycle facilities at the time of development due to the absence of adjacent facilities, the development shall provide the paved street width necessary to accommodate the required bicycle facilities.

3. Design Standards

Bicycle facilities shall be designed and improved in accordance with the requirements of this chapter and the Public Works Standards. Bicycle parking shall be designed and improved in accordance with Chapter 19.600 and the Milwaukie Downtown and Riverfront Plan: Public Area Requirements.

COMMENT:

Existing SE Harmony Road improvements include 35-ft. of pavement, with two 11.5-ft. travel lanes and 6-ft. bicycle lanes. As indicated by the attached City Pre-Application Conference Report, the existing street design meets County standards (see Exhibit 3). Per the attached Building Plans, bicycle parking is provided in the apartment units, and within the basement and first floor lobby areas of the building. As required, the existing and proposed bicycle facilities meet City design standards.

19.708.5: Pedestrian/Bicycle Path Requirements and Standards

COMMENT:

There are no pedestrian or bicycle paths in the vicinity of the subject site, therefore these standards do not apply.

Section 19.709: Public Utility Requirements

19.709.2: Public Utility Improvements

Public utility improvements shall be required for proposed development that would have a detrimental effect on existing public utilities, cause capacity problems for existing public utilities, or fail to meet standards in the Public Works Standards. Development shall be required to complete or otherwise provide for the completion of the required improvements.

- A. The Engineering Director shall determine which, if any, utility improvements are required. The Engineering Director's determination requiring utility

improvements shall be based upon an analysis that shows the proposed development will result in one or more of the following situations:

1. Exceeds the design capacity of the utility.
2. Exceeds Public Works Standards or other generally accepted standards.
3. Creates a potential safety hazard.
4. Creates an ongoing maintenance problem.

COMMENT:

To provide service to the apartment building, the attached Preliminary Utilities Plan indicates that the existing on-site public sanitary sewer line will be extended to the apartment building from a manhole on the south site of Minthorn Creek (see Exhibit 4). As demonstrated by the attached City Pre-Application Conference Report, the City Engineering Director has determined that the existing sanitary sewer main line has the capacity to serve the proposed development (see Exhibit 3).

B. The Engineering Director may approve one of the following to ensure completion of required utility improvements.

1. Formation of a reimbursement district in accordance with Chapter 13.30 for off-site public facility improvements fronting other properties.
2. Formation of a local improvement district in accordance with Chapter 3.08 for off-site public facility improvements fronting other properties.

COMMENT:

The applicant is not requesting approval of a reimbursement district or local improvement district for the public sanitary sewer line extension. Therefore, these standards do not apply.

19.709.3: Design Standards

Public utility improvements shall be designed and improved in accordance with the requirements of this chapter, the Public Works Standards, and improvement standards and specifications identified by the City during the development review process. The applicant shall provide engineered utility plans to the Engineering Director for review and approval prior to construction to demonstrate compliance with all City standards and

requirements.

COMMENT:

As required, the proposed sanitary sewer line extension will be designed to City standards. Prior to building permit approval, detailed engineered plans will be provided to the City.

Chapter 19.900: Land Use Applications

Section 19.906: Development Review

19.906.2: Applicability

B. Type II Review

The following development proposals must submit a development review application and are subject to the requirements of this section. Type II development review does not apply to development proposals in the downtown zones as these zones have a separate design review process.

1. New development, or expansions or modifications to existing development, for which the applicant elects, where a choice is available, to have the proposal reviewed against discretionary criteria or standards.

COMMENT:

As discussed under 19.505.3(D), the applicant is requesting discretionary review of several design elements that apply to multi-family developments. Although the submitted Development Review application may be processed as a Type II Review, this application is being evaluated concurrently with several other requests which will undergo a Type III Review. Since a Type III Review is requested, the Planning Commission will render a decision for all of the concurrent land use applications.

19.906.4: Approval Criteria

The criteria in this subsection are the approval criteria for Type I and Type II development review applications. The criteria are based on a review of development standards throughout Title 19 Zoning. Not all of the standards within the chapters listed below are applicable to a proposal, and the City will identify the applicable standards through the development review process. Though the criteria are the same for Type I and Type II development review, the standards evaluated in a Type I review will be clear and objective or require limited professional judgment, while the Type II review will involve discretionary standards

and/or criteria.

An application for Type I or Type II development review shall be approved when all of the following criteria have been met:

- A. The proposal complies with all applicable base zone standards in Chapter 19.300.**

COMMENT:

The subject site is located in the R-2 zoning district. Due to steep topography near the creek and site constraints associated with the WQR, the applicant is requesting a Type III Variance to permit a 12-ft. front yard setback when 25-ft. is required. Also due to a number of site challenges, the applicant is requesting a Type III Variance to permit a 35-ft. side yard height plane for the rear portion of the apartment building. The attached Preliminary Site Plan and Building Elevations demonstrate that the proposed development meets all other base zone standards in Chapter 19.300 (see Exhibit 4). As required, the applicant has addressed the requested variances under Section 19.911.

- B. The proposal complies with all applicable overlay zone and special area standards in Chapter 19.400.**

COMMENT:

As demonstrated by the attached Existing Conditions Plan, the site is significantly constrained by limited access, the location of Minthorn Creek and the associated WQR, and steeper topography near the waterway (see Exhibit 4). Due to these site challenges, the applicant is proposing to encroach into 2,847 sq. ft. of the 10,230 sq. ft. WQR on the south side of the creek. As required, the proposed impacts will be evaluated through the Type III Review process provided under Section 19.402.12.A.4.a.

- C. The proposal complies with all applicable supplementary development regulations in Chapter 19.500.**

COMMENT:

As mentioned under Section 19.505.3(D), the applicant is requesting discretionary review of several design elements that apply to multi-family developments. This narrative demonstrates that all other applicable development regulations in Chapter 19.500 have been met.

- D. The proposal complies with all applicable off-street parking and loading standards and requirements in Chapter 19.600.**

COMMENT:

Based on environmental and access site constraints, the proposed off-street parking area meets the requirements of Chapter 19.600 to the extent practicable. Due to location of the access easement and existing development at 5989 SE Harmony Road, less than 8-ft. of perimeter landscaping is provided between the drive aisle and the front lot line of both properties. In addition, with the requirement to install a retaining wall at the north end of the parking lot, less than 6-ft. of perimeter landscaping is provided in the northwest corner of the parking area. As required, the applicant has requested a variance to these landscaping standards under Section 19.911.

- E. The proposal complies with all applicable public facility standards and requirements, including any required street improvements, in Chapter 19.700.**

COMMENT:

As required, the applicant has demonstrated how this proposal complies with all public facility standards and requirements under Chapter 19.700.

- F. The proposal complies with all applicable conditions of any land use approvals for the proposal issued prior to or concurrent with the development review application.**

COMMENT:

There are no prior land use approvals which apply to the proposed development.

Section 19.911: Variances

19.911.2: Applicability

A. Eligible Variances

Except for situations described in Subsection 19.911.2.B, a variance may be requested to any standard or regulation in Titles 17 or 19 of the Milwaukie Municipal Code, or any other portion of the Milwaukie Municipal Code that constitutes a land use regulation per ORS 197.015.

COMMENT:

The applicant is requesting approval of a Type III Variance to the side yard height plane standard, parking lot perimeter landscaping requirements, and front yard setback standard. Since these Municipal Code standards are defined under Title 17, the requested variances may be reviewed under this section.

19.911.3: Review Process

A. General Provisions

1. Variance applications shall be evaluated through either a Type II or III review, depending on the nature and scope of the variance request and the discretion involved in the decision-making process.
2. Variance applications may be combined with, and reviewed concurrently with, other land use applications.
3. One variance application may include up to three variance requests. Each variance request must be addressed separately in the application. If all of the variance requests are Type II, the application will be processed through a Type II review. If one or more of the variance requests is Type III, the application will be processed through a Type III review. Additional variance requests must be made on a separate variance application.

COMMENT:

Due to the scope of the variance requests, this Variance application will be evaluated as a Type III Review. As discussed throughout this narrative, the applicant is also requesting concurrent review of a Type II Development Review for the proposed apartment building, and Type III Review for proposed activities within a WQR area. As permitted, the applicant is requesting approval of three variance requests with one Variance application. These requests will allow a variance from the side yard height plane standard, parking lot perimeter landscaping requirements, and front yard setback standard.

C. Type III Variances

Type III variances allow for larger or more complex variations to standards that require additional discretion and warrant a public hearing consistent with the Type III review process. Any variance request that is not specifically listed as a Type II variance per Subsection 19.911.3.B shall be evaluated through a Type III review per Section 19.1006.

COMMENT:

Since the proposed variances are not listed under Subsection 19.911.3.B, the applicant has addressed the Type III Variance approval criteria under Subsection 19.911.4.

19.911.4: Approval Criteria

B. Type III Variances

An application for a Type III variance shall be approved when all of the criteria in either Subsection 19.911.4.B.1 or 2 have been met. An applicant may choose which set of criteria to meet based upon the nature of the variance request, the nature of the development proposal, and the existing site conditions.

1. Discretionary Relief Criteria

- a. The applicant's alternatives analysis provides, at a minimum, an analysis of the impacts and benefits of the variance proposal as compared to the baseline code requirements.**

COMMENT:

The applicant is requesting approval of a Type III Variance to the side yard height plane standard, parking lot perimeter landscaping requirements, and front yard building setback standard. As previously mentioned, the subject site contains a number of constraints including the presence of a large natural resource area, steep topography near the creek, and Arterial Street access restrictions along SE Harmony Road. Due to the compounding nature of these constraints, they create unique hardships when developing the subject property. As discussed below, the variance proposals provide an overall positive benefit when compared to the baseline code requirements.

When analyzing the impacts and benefits of the proposed variances, it is important to first understand how natural resources on the site significantly limit how it can be developed. The attached Preliminary Site Plan indicates the WQR area contains a total of 33,652 sq. ft. and includes the area within the ordinary high water mark of Minthorn Creek, a wetland on the north side of the stream, and 50-ft. wide vegetated corridors on both sides of the waterway. Based on a net site area of 57,634 sq. ft., the WQR encompasses approximately 58% of the subject property. The unencumbered net site area contains 23,982 sq. ft., with 7,451 sq. ft. located on the north side of the creek, and 16,531 sq. ft. located on the south side of the waterway. As concluded by the applicant's alternative analysis under Section 19.402.12.A.4.a, the northern portion of the site is inaccessible. Therefore, the only portion of the site that can be developed is on the south side of the creek.

When reviewing the benefits and impacts of the proposed variances, it is also important to note that access to the site is severely constrained. Since the Arterial Street access spacing standard is 600-ft., the proposed development is not permitted to have direct site access from SE Harmony Road. As a result, the applicant is required to share access with the Harmony Park Townhomes and use the existing access easement to the west of the site. Due to the location of the existing development on the adjacent property, the 20-ft. access easement is located adjacent to the right-of-way.

As indicated by the attached Preliminary Site Plan, the applicant is requesting approval of a Type III Variance to locate the apartment building 12-ft. from the front lot line when 25-ft. is the standard. The benefits of the proposed front setback variance are reduced encroachment into the WQR and an avoidance of steep topography near the creek. The impact of the proposed front setback variance is that the eastern half of the apartment building is located closer to the SE Harmony Road right-of-way (however, the building is still 25-ft. from the curbline of the roadway). If the standard 25-ft. front yard setback were applied to the development, the apartment building would permanently impact another 680 sq. ft. of the WQR, and the structure would be located where grades near Minthorn Creek approach 25% slopes. In addition, the width of the vegetated corridor would be reduced to only 15-ft. adjacent to the apartment structure. Therefore, when balancing relative impacts and benefits of the proposed variance verses applying the typical front setback standard, the proposal provides more benefits and fewer impacts as compared to the baseline code requirement.

The applicant's request also includes approval of a Type III Variance to permit a 35-ft. side yard height plane, when 25-ft. is the standard. The benefits of the proposed variance are the ability to construct a daylight basement in the rear of the apartment building, to reduce the building footprint and minimize impacts to WQR while meeting site's minimum density standard. The impact of the proposed side yard height plane variance is that it increases the height plane of the apartment building along a portion of the east property line. If the standard side yard height plane were applied to the development, at least one apartment unit would be eliminated with the current building footprint. To meet the site's minimum density standard, the increased building footprint would be required, and the permanently impact area within the WQR would be increased. With a larger apartment building footprint, the width of the vegetated corridor would be reduced to approximately 15-ft. and steeper slopes along Minthorn Creek would be impacted. Therefore, when balancing relative impacts and benefits of the proposed variance verses applying the typical front setback standard, the proposal provides more benefits and fewer impacts as compared to the baseline code requirement.

Finally, the applicant is requesting approval of a Type III Variance to reduce the parking lot perimeter landscaping requirement from 6-ft. to 3.54-ft. where a proposed retaining wall is adjacent to the west property line, and to reduce the landscaping requirement from 8-ft. to 1.50-ft. along the drive aisle extending from 5989 SE Harmony Road to the parking lot on the subject site. The benefits of the proposed west property line variance along the east property line are that the width of the apartment building can be minimized, and the building depth does not need to be increased. In addition, the west property line variance allows the installation of a retaining wall at the north end of the parking lot, thereby reducing the amount of the grading required in the WQR. The benefit of the south property line variance is the ability to use the existing access easement along the southern boundary of 5989 and 61165 SE Harmony Road. The impact of the proposed variance is a reduction in the width of the planting areas adjacent to the west and south property lines. If the standard perimeter landscaping standards were applied to the development, the existing easement could not be used to access the site, and site grading and an enlarged building footprint would create more impacts to the WQR area. Therefore, when balancing relative impacts and benefits of the proposed variance verses applying the typical front setback standard, the proposal provides more benefits and fewer impacts as compared to the baseline code requirement.

b. The proposed variance is determined by the Planning Commission to be both reasonable and appropriate, and it meets one or more of the following criteria:

(1) The proposed variance avoids or

minimizes impacts to surrounding properties.

COMMENT:

As indicated by the attached Preliminary Site Plan, the proposed variance to reduce the front yard setback to 12-ft. will locate the eastern half of apartment building approximately 25-ft. from the curblineline of SE Harmony Road, however the variance will not create impact to surrounding properties (see Exhibit 4). The attached Apartment Building Elevations illustrates that the proposed side yard height plane variance does increase the height plane along the east property line. However, the height plane meets the standard at the front of the building, and the proposed height gradually increases along the property line and does not extend to 35-ft. until it reaches the rear of the building (see Exhibit 4). The applicant's Preliminary Site Plan illustrates that the proposed parking lot perimeter landscape variance only affects properties within the Harmony Park Townhomes complex (see Exhibit 4). Both 5989 and 6115 SE Harmony Road are under the same ownership and the location of the existing access easement requires a reduction in perimeter landscaping along the Harmony Road right-of-way. The plan also demonstrates that the existing sign-obscuring fence between 5989 and 6115 SE Harmony Road minimizes impacts from the proposed reduction in perimeter landscaping along the west property line.

(2) The proposed variance has desirable public benefits.

COMMENT:

As discussed above, the proposed variances will reduce impacts to the delineated WQR area along the south side of Minthorn Creek. The attached Water Quality Resource Site Assessment discusses ecological functions of the WQR, which as a natural resource, provides public benefits to the local watershed and larger regional environment. These functional values include protecting water features from development, providing shade and moderating microclimate, moderating streamflow and providing water storage, providing water filtration and infiltration, providing bank stabilization and sediment control, ensuring large wood recruitment, and nurturing organic material resources.

(3) The proposed variance responds to the existing built or natural environment in a creative and sensitive manner.

COMMENT:

Under R-2 zone standards, a 3-story building with 15-23 apartment units may be developed on the 1.33 acre site. As indicated by the attached Preliminary Site Plan, the proposed building contains 15 apartment units, which is the minimum required density for the subject property (see Exhibit 4). To minimize impacts to the WQR, the applicant is proposing to reduce the building footprint by adding a 4th story under the provisions of Section 19.302.5. Using the site's natural topography, the additional story sensitively responds the WQR in both a creative and sensitive manner. To further reduce impacts to the WQR, the applicant is also requesting a variance to locate the building 12-ft. from the front property line. By siting and designing the apartment building as proposed, impacts to the WQR area are limited to 2,734 sq. ft., or 26% of the 10,230 sq. ft. WQR on the south side of the creek. Therefore, the requested variance to the side yard height plane and front yard building setback standards will help to protect natural resources on the site.

Due to site constraints which include access restrictions on SE Harmony Road, steep topography near the creek, and the desire to protect the WQR on the subject property, the parking lot must be located in the southwest corner of the site. The attached Preliminary Site Plan demonstrates that the location of existing development and access easement on the adjacent parcel creates the need to request a variance to the 8-ft. parking lot landscaping requirement between the parking area and front property line (see Exhibit 4). The attached Preliminary Grading Plan illustrates that while the proposed retaining wall will limit grading impacts within the WQR, it creates the need to request a variance to the 6-ft. landscaping requirement in the northwest corner of the parking lot. Although the applicant is adding a 4th story to reduce the building footprint, the narrow site does not provide adequate width to meet the 6-ft. landscaping requirement with the retaining wall. The Preliminary Site Plan demonstrates that perimeter landscaping requirements are met for the remainder of the parking lot area. By creatively siting and designing the parking lot as proposed, the Arterial Street access spacing standard will be met and grading impacts within the WQR will be minimized. Therefore, the requested variance to the parking lot perimeter landscaping standard responds to both the existing built and natural environment in a sensitive manner.

- c. Impacts from the proposed variance will be mitigated to the extent practicable.**

COMMENT:

To mitigate the proposed variance to the side yard height plane, the applicant will only add a 4th story to the rear of the apartment building. The attached Apartment Building Plans and Elevations indicate that the side yard height plane standard of 25-ft. will still be met at the front of the building. The proposed 35-ft. height plane applies to rear portion of the building, which is located approximately 10-ft. from the eastern property line, and approximately 35-ft. from the closest dwelling to the east of the site. Therefore, impacts from this proposed variance are mitigated to the extent practicable.

The proposed variance to the front yard setback has been mitigated by limiting the yard reduction to 3 feet. As demonstrated by the attached Preliminary Site Plan, the proposed front yard reduction will not impact any neighboring properties, and all other building setbacks standards have been met (see Exhibit 4). Due to the angle of the front lot line, the 13-ft. setback reduction is only needed for the eastern half of the apartment building. As such, impacts from this proposed variance are mitigated to the extent practicable.

The Preliminary Site Plan indicates that the proposed variance to the parking lot landscaping standards will be mitigated several ways (see Exhibit 4). The plan shows that the drive aisle's encroachment into the 8-ft. landscaping area will be mitigated by separating the parking area from the public sidewalk with a 6-in. curb and a 42-in. high metal fence. In addition, the retaining wall encroachment into the 6-ft. landscaping area will be mitigated by an existing 6-ft. high chain link fence with sight-obscuring slats on the adjacent Harmony Park Apartments property. With these mitigation measures, impacts from this proposed variance are mitigated to the extent practicable.

Chapter 19.1000: Review Procedures

Section 19.1002: Pre-Application Conference

19.1002.2: Applicability

- B. For Type II, III, IV, and V applications, and expedited annexations per Section 19.1104, a preapplication conference is required, with the following exceptions:**

COMMENT:

The applicant is requesting land use approval of a Type II Development Review application with a concurrent Type III Variance to the side yard height plane standard, parking lot landscaping requirements, and front yard setback standard. In addition, a Type III Review is requested for proposed activities within the site's water quality resource (WQR) area. As required, City staff reviewed applicable development standards with the applicant. A copy of the City Pre-Application Conference Report has been attached to this application (see Exhibit 3).

19.1002.4: Preapplication Conference Expiration

- A. A preapplication conference is valid for 2 years. If a land use application or development permit has not been submitted within 2 years of the conference date, the applicant is required to schedule a new preapplication conference prior to submittal. This requirement may be waived per Subsection 19.1002.2.B.1.**

COMMENT:

As required, the applicant attended a pre-application conference with City staff on November 2, 2017. Therefore, the applicant's pre-application conference is valid until November 1, 2019.

- C. If a development proposal is significantly modified after a preapplication conference occurs, the Planning Director may require a new preapplication conference. The City may refuse to accept a land use application or development permit for a significantly altered development**

proposal until a new preapplication conference is held. (Ord. 2025 § 2, 2011)

COMMENT:

The attached City Pre-Application Conference Report demonstrates that the current development proposal is substantially similar to the concept plan reviewed at the November 2, 2017 meeting with the City (see Exhibit 3).

Chapter 19.1200: Solar Access Protection

19.1203: Solar Access for New Development

19.1203.3: Design Standard

At least 80% of the lots in a development subject to these provisions shall comply with one or more of the options in this subsection; provided a development may, but is not required to, use the options in Subsections 19.1203.3.B or C below to comply with Section 19.1203.

A. Basic Requirement

A lot complies with Subsection 19.1203.3 if it:

- 1. Has a north-south dimension of 90 ft. or more; and**
- 2. Has a front lot line that is oriented within 30 degrees of a true east-west axis (see Figure 19.1203.3).**

COMMENT:

As illustrated by the attached Existing Conditions Plan, the subject site has a north-south dimension of 90-ft. or more and a front lot line within 30 degrees of a true east-west axis. As such, the lot complies with the Basic Requirement for solar access.

IV. SUMMARY AND CONCLUSIONS

Based on the above findings, the applicant has demonstrated compliance with applicable sections of the Milwaukie Municipal Code. Therefore, the applicant requests that the submitted concurrent applications be approved.

VI. EXHIBITS

- 1. Application Form**
- 2. Property Deed, Legal Description, and Easements**
- 3. City Pre-Application Conference Report**
- 4. Preliminary Development Plans**
 - P-1: Cover Sheet**
 - P-2: Existing Conditions Plan**
 - P-3: Aerial Photograph/Land Use Plan**
 - P-4: Preliminary Site Plan**
 - P-5: WQR Impacts/Tree Removal Plan**
 - P-6: Interior Parking Lot/WQR Planting Areas Plan**
 - C-1: Preliminary Civil Site Plan**
 - C-2: Preliminary Utility Plan**
 - C-3: Preliminary Grading/Erosion and Soil Control/
Construction Management Plan**
 - A-1: Apartment Building Elevations**
 - A-2: Apartment Building Floor Plans**
- 5. Preliminary Stormwater Report**
- 6. Wetland/Waters Delineation Report**
- 7. Department of State Lands Wetland Delineation Concurrence Letter**
- 8. Water Quality Resource Site Assessment/Mitigation Plan**

APPLICATION FORM



PLANNING DEPARTMENT
 6101 SE Johnson Creek Blvd
 Milwaukie OR 97206

PHONE: 503-786-7630
 FAX: 503-774-8236
 E-MAIL: planning@milwaukieoregon.gov

Application for Land Use Action

Master File #: _____

Review type*: I II III IV V

CHOOSE APPLICATION TYPE(S):

Development Review

Variance: Variance

Natural Resource Review

...

...

Use separate application forms for:

- Annexation and/or Boundary Change
- Compensation for Reduction in Property Value (Measure 37)
- Daily Display Sign
- Appeal

RESPONSIBLE PARTIES:

APPLICANT (owner or other eligible applicant—see reverse): HPA 2, LLC

Mailing address: 10117 SE Sunnyside Road, #545, Clackamas, OR Zip: 97015

Phone(s): 702-234-9961 E-mail: edwlv01@gmail.com

APPLICANT'S REPRESENTATIVE (if different than above): Cascadia Planning + Development Services

Mailing address: PO Box 1920, Silverton, OR Zip: 97381

Phone(s): 503-804-1089 E-mail:

SITE INFORMATION:

Address: 6115 SE Harmony Road Map & Tax Lot(s): 1S2E31D / 2200

Comprehensive Plan Designation: MED. D Zoning: R-2 Size of property: 1.33 Acres

PROPOSAL (describe briefly):

Requesting approval of a Development Review Application with a Concurrent Type III Variance to the Side Yard Height Plane, Front Yard Setback, Parking Lot Perimeter Landscaping, and a Type III Review for Proposed Activities within a Water Quality Resource (WQR) Area.

SIGNATURE:

ATTEST: I am the property owner or I am eligible to initiate this application per Milwaukie Municipal Code (MMC) Subsection 19.1001.6.A. If required, I have attached written authorization to submit this application. To the best of my knowledge, the information provided within this application package is complete and accurate.

Submitted by: *America Alicano, Member* Date: *4/5/18*

IMPORTANT INFORMATION ON REVERSE SIDE

RESET

*For multiple applications, this is based on the highest required review type. See MMC Subsection 19.1001.6.B.1.

WHO IS ELIGIBLE TO SUBMIT A LAND USE APPLICATION (excerpted from MMC Subsection 19.1001.6.A):

Type I, II, III, and IV applications may be initiated by the property owner or contract purchaser of the subject property, any person authorized in writing to represent the property owner or contract purchaser, and any agency that has statutory rights of eminent domain for projects they have the authority to construct.

Type V applications may be initiated by any individual.

PREAPPLICATION CONFERENCE:

A preapplication conference may be required or desirable prior to submitting this application. Please discuss with Planning staff.

REVIEW TYPES:

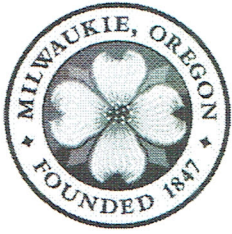
This application will be processed per the assigned review type, as described in the following sections of the Milwaukee Municipal Code:

- Type I: Section 19.1004
- Type II: Section 19.1005
- Type III: Section 19.1006
- Type IV: Section 19.1007
- Type V: Section 19.1008

THIS SECTION FOR OFFICE USE ONLY:

FILE TYPE	FILE NUMBER	FEE AMOUNT*	PERCENT DISCOUNT	DISCOUNT TYPE	DEPOSIT AMOUNT	DATE STAMP
Master file		\$			\$	
Concurrent application files		\$			\$	
		\$			\$	
		\$			\$	
		\$			\$	
SUBTOTALS		\$			\$	
TOTAL AMOUNT RECEIVED: \$			RECEIPT #:		RCD BY:	
Associated application file #s (appeals, modifications, previous approvals, etc.):						
Neighborhood District Association(s):						
Notes:						

*After discount (if any)



PLANNING DEPARTMENT
6101 SE Johnson Creek Blvd
Milwaukie OR 97206

PHONE: 503-786-7630
FAX: 503-774-8236
E-MAIL: planning@milwaukieoregon.gov

For all Land Use Applications
(except Annexations and Development Review)

Submittal Requirements

All land use applications must be accompanied by a signed copy of this form (see reverse for signature block) and the information listed below. The information submitted must be sufficiently detailed and specific to the proposal to allow for adequate review. Failure to submit this information may result in the application being deemed incomplete per the Milwaukie Municipal Code (MMC) and Oregon Revised Statutes.

Contact Milwaukie Planning staff at 503-786-7630 or planning@milwaukieoregon.gov for assistance with Milwaukie's land use application requirements.

1. **All required land use application forms and fees**, including any deposits.
Applications without the required application forms and fees will not be accepted.
2. **Proof of ownership or eligibility to initiate application** per MMC Subsection 19.1001.6.A.
Where written authorization is required, applications without written authorization will not be accepted.
3. **Detailed and comprehensive description** of all existing and proposed uses and structures, including a summary of all information contained in any site plans.
Depending upon the development being proposed, the description may need to include both a written and graphic component such as elevation drawings, 3-D models, photo simulations, etc. Where subjective aspects of the height and mass of the proposed development will be evaluated at a public hearing, temporary on-site "story pole" installations, and photographic representations thereof, may be required at the time of application submittal or prior to the public hearing.
4. **Detailed statement** that demonstrates how the proposal meets the following:
 - A. All applicable development standards (listed below):
 1. **Base zone standards** in Chapter 19.300.
 2. **Overlay zone standards** in Chapter 19.400.
 3. **Supplementary development regulations** in Chapter 19.500.
 4. **Off-street parking and loading standards and requirements** in Chapter 19.600.
 5. **Public facility standards and requirements**, including any required street improvements, in Chapter 19.700.
 - B. All applicable application-specific approval criteria (check with staff).
These standards can be found in the MMC, here: www.qcode.us/codes/milwaukie/
5. **Site plan(s), preliminary plat, or final plat** as appropriate.
See Site Plan, Preliminary Plat, and Final Plat Requirements for guidance.
6. **Copy of valid preapplication conference report**, when a conference was required.

APPLICATION PREPARATION REQUIREMENTS:

- Five hard copies of all application materials are required at the time of submittal (unless submitted electronically). Staff will determine how many additional hard copies are required, if any, once the application has been reviewed for completeness.
- All hard copy application materials larger than 8½ x 11 in. must be folded and be able to fit into a 10- x 13-in. or 12- x 16-in. mailing envelope.
- All hard copy application materials must be collated, including large format plans or graphics.

ADDITIONAL INFORMATION:

- Neighborhood District Associations (NDAs) and their associated Land Use Committees (LUCs) are important parts of Milwaukie's land use process. The City will provide a review copy of your application to the LUC for the subject property. They may contact you or you may wish to contact them. Applicants are strongly encouraged to present their proposal to all applicable NDAs prior to the submittal of a land use application and, where presented, to submit minutes from all such meetings. NDA information: www.milwaukieoregon.gov/citymanager/what-neighborhood-district-association.
- Submittal of a full or partial electronic copy of all application materials is strongly encouraged.

As the authorized applicant I, (print name) Annenie Williams, Member, attest that all required application materials have been submitted in accordance with City of Milwaukie requirements. I understand that any omission of required items or lack of sufficient detail may constitute grounds for a determination that the application is incomplete per MMC Subsection 19.1003.3 and Oregon Revised Statutes 227.178. I understand that review of the application may be delayed if it is deemed incomplete.

Furthermore, I understand that, if the application triggers the City's sign-posting requirements, I will be required to post signs on the site for a specified period of time. I also understand that I will be required to provide the City with an affidavit of posting prior to issuance of any decision on this application.

Applicant Signature: Annenie Williams, Member

Date: 4/5/18

Official Use Only

Date Received (date stamp below):



PLANNING DEPARTMENT
 6101 SE Johason Creek Blvd
 Milwaukie OR 97206

PHONE: 503-786-7630
 FAX: 503-774-8236
 E-MAIL: planning@milwaukieoregon.gov

Development Review Application Worksheet

This worksheet is intended to assist you in determining if a development review application is needed. If a Type I development review is required, this form can be used to complete the application. Not all information requested on this form may be needed for your project. Please discuss your project with Planning Department staff prior to completing this form.

Step 1: Review Type

Exempt from Development Review	Type I Development Review Excludes single-family structures/ accessory structures	Type II Development Review
<input type="checkbox"/> Single-family detached or attached structures (new or addition). <input type="checkbox"/> Single-family residential accessory structures. <input type="checkbox"/> Modifications to interior of existing buildings with no change of use.	<input type="checkbox"/> New development. <input type="checkbox"/> Expansions or modifications to structures. <input type="checkbox"/> Change in primary use (with or without development or expansion). <input type="checkbox"/> Parking area expansion/ modification of 5 or more spaces.	<input type="checkbox"/> New construction in BI Zone >1,000 sq ft. <input type="checkbox"/> New construction in M Zone >1,000 sq ft AND within 120 ft of residential zone. <input checked="" type="checkbox"/> New development reviewed against discretionary criteria/standards. <input type="checkbox"/> Large-scale projects/approval criteria not appropriate for Type I review.
<i>Development review not required. Project can proceed to obtaining building permit.</i>	<i>Development review application required. Application can be made by completing a land use application form, along with this form, and submitting development permits for review.</i>	<i>Preapplication conference is required prior to submitting a development review permit. Please discuss the preapplication conference with Planning Department staff.</i>

Step 2: Information for Type I Development Review Application

If your project has already received land use approval, please indicate the file number: _____

Description of overall project

Site Address: 6115 SE Harmony Road

Approval of a Development Review Application with a Concurrent Type III Variance to the Side Yard Height Plane, Front Yard Setback, Parking Lot Perimeter Landscaping, and a Type III Review for Proposed Activities within a Water Quality Resource (WQR) Area.

Description of use(s): List characteristics of uses that are or will be present on-site. Relevant information will vary depending on zoning. Commonly required information includes good/services provided, items manufactured or stored, and number of employees. *M Zone uses: refer to Milwaukie Municipal Code (MMC). 19.309.1. BI Zone uses: refer to MMC 19.310.2-4.*

The 1.33 acre site is currently vacant and is zoned R-2 (Medium Density Residential). The submitted application is to permit the development of the Harmony Park Townhomes PH II project, which consists of a 15-unit apartment building and associated site improvements.

Floor areas: Floor areas are needed for evaluating parking ratios and the M Zone use standards in MMC 19.309.1.

Use	Existing Sq Ft	Proposed Sq Ft	Total Sq Ft
Two 1-Bedroom Basement Units		639	1,278
One Studio Unit		354	354
One 1-Bedroom Main Floor Unit		686	686
Eleven 2-Bedroom Units		1,130	12,430

Other information: Use this space to provide other information that Planning Staff needs for review of the project. Examples: uses that base parking on something other than sq ft, zoning overlays, other existing uses on multitenant sites.

N/A

As the authorized applicant I, HPA 2, LLC, attest that all required application materials have been submitted in accordance with City of Milwaukie requirements. I understand that any omission of required items or lack of sufficient detail may constitute grounds for a determination that the application is incomplete per MMC 19.1003.3 and Oregon Revised Statutes 227.178. I understand that review of the application may be delayed if it is deemed incomplete.

Applicant Signature: *Aimee Williams, member*

Date: 4/5/18

Official Use Only Date Received (date stamp below):

Received by: _____

RESET

PROPERTY DEED

RECORDING REQUESTED BY:
Fidelity National Title
Company of Oregon

12817 SE 93rd Avenue
Clackamas, OR 97015

Clackamas County Official Records **2016-029184**
Sherry Hall, County Clerk 05/06/2016 09:03:41 AM
D-D Cnt=1 Stn=2 LESLIE \$58.00
\$10.00 \$16.00 \$10.00 \$22.00

GRANTOR'S NAME:
Ken Leavens Properties, Inc.

GRANTEE'S NAME:
HPA 2 LLC

AFTER RECORDING RETURN TO:
HPA 2 LLC
16479 SE Oak Meadow Court
Damascus, OR 97089

SEND TAX STATEMENTS TO:
SAME AS ABOVE

00097184 and 12E31D/02200
6115 Se Harmony Rd., Milwaukie, OR 97222

SPACE ABOVE THIS LINE FOR RECORDER'S USE

STATUTORY WARRANTY DEED

Ken Leavens Properties, Incorporated, an Oregon corporation, Grantor, conveys and warrants to HPA 2 LLC, an Oregon limited liability company, Grantee, the following described real property, free and clear of encumbrances except as specifically set forth below, situated in the County of Clackamas, State of Oregon:

Being a part of the Donation Land Claim of Joseph P. Eagon and wife, in Township 2 South, Range 2 East, of the Willamette Meridian, and a part of the Donation Land Claim of J. D. Garrett and wife, in Townships 1 and 2 South, Range 2 East of the Willamette Meridian, in the County of Clackamas and State of Oregon, bounded and described as:

Beginning at an iron bolt driven in the Northerly boundary of that certain tract of land conveyed to J.E. Minard Black by Deed recorded in Book 107, Page 518, Deed Records, which bolt is on the Southwesterly side line of the right of way of the O. & C. R. R., South 65° 16' 30" East 399.6 feet distant from most Northerly corner of said Black tract, being also 108.84 feet North and 494.83 feet West of a basalt stone set at the intersection of the North boundary of Section 5, Township 2 South, Range 2 East, of the Willamette Meridian, with the East boundary of the J. D. Garrett Donation Land Claim; thence South 65° 16' 30" East tracing the Southwesterly line of said right of way 107.78 feet to an iron pipe and the true place of beginning of the tract of land to be described; thence continuing South 65° 16' 30" East tracing the Southwesterly line of said right of way 225 feet; thence in a Southerly direction 285 feet, more or less, to a point in the center of Foster County Road, said point being South 9° 32' East 31.32 feet and North 63° 44' East 160 feet from an iron pipe driven on the Northerly side of said Foster County Road; thence South 63° 44' West 160 feet to a point from which an iron pipe driven on the Northerly side of said road bears North 9° 32' West 31.32 feet; thence North 9° 32' West 451.90 feet to the said true point of beginning.

THE TRUE AND ACTUAL CONSIDERATION FOR THIS CONVEYANCE IS TWO HUNDRED SEVENTY-FIVE THOUSAND AND NO/100 DOLLARS (\$275,000.00). (See ORS 93.030).

Subject to:

Rights of the public to any portion of the Land lying within roads and highways.

Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: The City of Milwaukie, Oregon
Purpose: Sewer
Recording Date: February 26, 1974
Recording No: 74-4605
Recording Date: August 6, 1974
Recording No: 74-21906
Affects: The Northeasterly 15 feet

Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: The City of Milwaukie, Oregon
Purpose: Sewer
Recording Date: January 10, 1975
Recording No: 75-725
Recording Date: May 3, 1977
Recording No: 77-16475
Affects: The North 185 feet of the East 10 feet

Fidelity National Title of Oregon 45141519356-07

STATUTORY WARRANTY DEED

(continued)

Easement Deed by Court Order in Settlement of Landowner Action

Recording Date: September 24, 2013
Recording No.: 2013-067267

BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON TRANSFERRING FEE TITLE SHOULD INQUIRE ABOUT THE PERSON'S RIGHTS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010. THIS INSTRUMENT DOES NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY THAT THE UNIT OF LAND BEING TRANSFERRED IS A LAWFULLY ESTABLISHED LOT OR PARCEL, AS DEFINED IN ORS 92.010 OR 215.010, TO VERIFY THE APPROVED USES OF THE LOT OR PARCEL, TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES, AS DEFINED IN ORS 30.930, AND TO INQUIRE ABOUT THE RIGHTS OF NEIGHBORING PROPERTY OWNERS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010.

IN WITNESS WHEREOF, the undersigned have executed this document on the date(s) set forth below.

Dated May 4th 2016, if a corporate grantor, it has caused its name to be signed by order of its board of directors.

Ken Leavens Properties, Incorporated, an Oregon corporation

BY: [Signature]
Mark Boring, Treasurer

STATE OF OREGON, County of Clackamas ss.
On 5.4.16 before me personally appeared Mark Boring as Treasurer, whose identity was established to my satisfaction, and who said that the foregoing instrument was executed on behalf of Ken Leavens Properties Inc.
IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my official seal on the date first written above.
[Notary Seal: Carrie Redifer, Notary Public Oregon, Commission No. 922770, My Commission Expires December 03, 2017]
Carrie Redifer
Notary Public for Oregon 12.3.17
My commission expires

NO PART OF ANY STEVENS-NESS FORM MAY BE REPRODUCED IN ANY FORM OR BY ANY ELECTRONIC OR MECHANICAL MEANS.
FORM No. 786 - ACKNOWLEDGMENT, CORPORATION (ORS 194.505 (2)). EA © 1992-2003 STEVENS-NESS LAW PUBLISHING CO., PORTLAND, OR www.stevensness.com

After recording return to:
16479 SE Oak Meadow Court
Damascus, OR 97089
Harmony Park Apts LLC
No change in tax statements

Clackamas County Official Records **2017-038243**
Sherry Hall, County Clerk
06/07/2017 03:34:00 PM
D-E Cnt=1 Stn=0 KARLYN
\$30.00 \$16.00 \$10.00 \$22.00 \$78.00

GRANT OF EASEMENT

Fidelity National Title of Oregon 45141710857-07

Harmony Park Apartments, LLC, an Oregon limited liability company, Grantor, does hereby grant, assign and set over to, HPA 2, LLC, an Oregon limited liability company, Grantee, an easement through, under, over and along the property described as "The Easement Tract" below. This easement shall run with the land and shall be binding upon and shall inure to the benefit of the parties hereto, their heirs, successors, and assigns.

The Grantee agrees to save and hold harmless the Grantor from any and all claims of third parties arising from the Grantee use of the rights herein granted.

The true consideration for this conveyance is non-monetary.

The Easement Tract:

Please see attached Exhibit "A" and depiction

The Benefited Property:

That property as described in document recorded May 6th, 2016 as fee number 2016-029184, Clackamas County, Oregon. Please see attached Exhibit "B", 2016-0291284, for legal description.

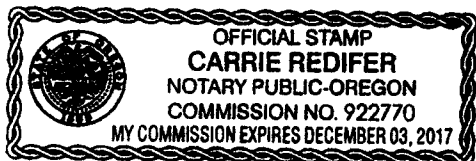
The Burdened Property:

That property as described in document recorded March 4, 2008 as fee number 2008-015141 and rerecorded July 25, 2012 as fee number 2012-046726, Clackamas County, Oregon. Please see attached Exhibit "C", 2012-046726, for legal description.


By: Annemie Williams, Member

STATE OF OREGON)
) ss
COUNTY OF CLACKAMAS)

This instrument was acknowledged before me on June 6, 2017, by Annemie Williams as Member of Harmony Park Apartments, LLC.



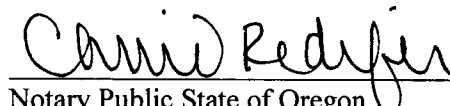

Notary Public State of Oregon
My Commission Expires: 12.3.17

EXHIBIT "A"

Summit Land Surveyors, LLC
12950 SW Pacific Hwy, Suite 255
Tigard, OR 97223
Phone & Fax 503.928.5589
www.summitlandsurveyors.com



June 2, 2017

Access Easement

5989 SE Harmony Road

A portion of that tract of land described in Document No. 2008-015141 being situated in the northeast ¼ of Section 6, Township 2 South, Range 2 East of the Willamette Meridian, in Clackamas County, Oregon, being more particularly described as follows:

Beginning at a point on north right of way line of SE Harmony Road, said point being on the south boundary of said tract of land described in Document No. 2008-015141, and bearing N66°27'55"E, 3.00 feet from a 5/8" Iron Rod which bears S66°27'55"W, 106.00 feet from an Iron Pipe in a tree root at the southeast corner of said Document No. 2008-015141;

thence 66.02 feet along the arc of a 36.00 foot radius curve to the right through a central angle of 105°04'28", the chord of which bears N30°42'22"E, 57.15 feet;

thence N83°14'35"E, 41.21 feet;

thence N66°27'55"E, 23.60 feet to a point on the east boundary of said tract of land described in Document No. 2008-015141;

thence along said east boundary, S06°52'00"E, 20.88 feet;

thence leaving said east boundary, S66°27'55"W, 20.56 feet;

thence S83°14'35"W, 35.30 feet to a point of curvature;

thence 25.27 feet along the arc of a 15.00 foot radius curve to the left through a central angle of 96°31'02", the chord of which bears S34°59'04"W, 22.38 feet to a point on the south boundary of said tract of land described in Document No. 2008-015141;

thence along said south boundary, S66°27'55"W, 30.00 feet to the Point of Beginning.

Containing 2,416 Sq.Ft.

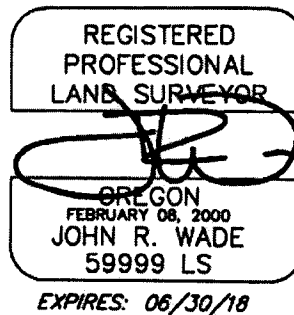
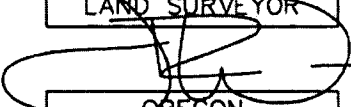


Exhibit "A" DEPICTION

REGISTERED
PROFESSIONAL
LAND SURVEYOR



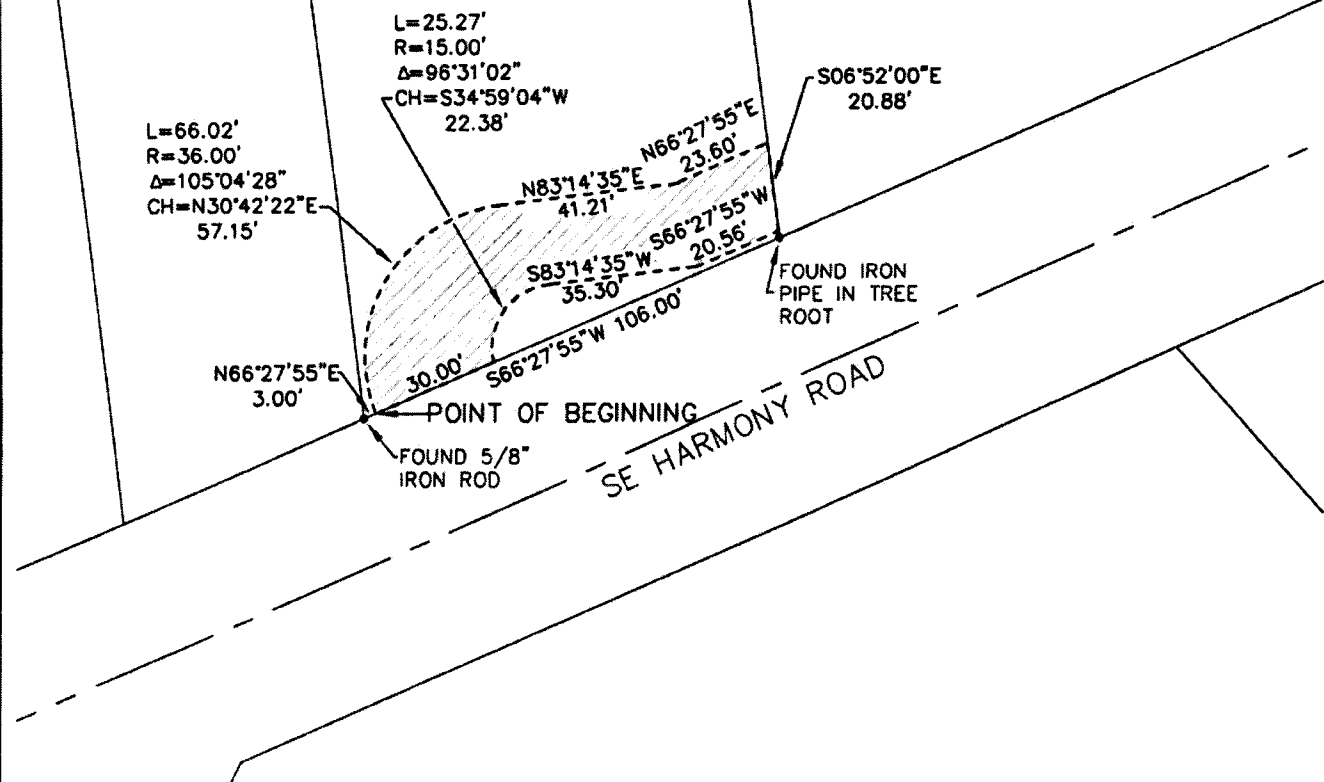
OREGON
FEBRUARY 08, 2000
JOHN R. WADE
59999 LS

EXPIRES: 06/30/18



DOCUMENT NUMBER 2008-015141
TAX LOT 2100
5989 SE HARMONY RD
MILWAUKIE, OR

DOCUMENT NUMBER 2016-029184
TAX LOT 2200
6115 SE HARMONY RD
MILWAUKIE, OR



SUMMIT
LAND SURVEYORS

12950 SW PACIFIC HIGHWAY, SUITE 255
TIGARD, OR 97223
PHONE & FAX: 503.928.5589

ACCESS EASEMENT

SITUATED IN THE NORTHEAST 1/4 OF SECTION 8,
TOWNSHIP 2 SOUTH, RANGE 2 EAST, WILLAMETTE MERIDIAN,
CLACKAMAS COUNTY, STATE OF OREGON

JOB NO: 998-187	DATE: 06/02/17	SCALE: 1"=40'	PREPARED FOR: ED WILLIAMS
---------------------------	--------------------------	-------------------------	-------------------------------------

EXHIBIT "B"

RECORDING REQUESTED BY:
Fidelity National Title
Company of Oregon

12817 SE 93rd Avenue
Clackamas, OR 97015

GRANTOR'S NAME:
Ken Leavens Properties, Inc.

GRANTEE'S NAME:
HPA 2 LLC

AFTER RECORDING RETURN TO:
HPA 2 LLC
16479 SE Oak Meadow Court
Damascus, OR 97089

SEND TAX STATEMENTS TO:
SAME AS ABOVE

00097184 and 12E31D/02200
6115 Se Harmony Rd., Milwaukie, OR 97222

Clackamas County Official Records Sherry Hall, County Clerk	2016-029184 05/06/2016 09:03:41 AM
D-D \$10.00 \$16.00 \$10.00 \$22.00	Cnt=1 Stn=2 LESLIE \$58.00

SPACE ABOVE THIS LINE FOR RECORDER'S USE

STATUTORY WARRANTY DEED

Ken Leavens Properties, Incorporated, an Oregon corporation, Grantor, conveys and warrants to HPA 2 LLC, an Oregon limited liability company, Grantee, the following described real property, free and clear of encumbrances except as specifically set forth below, situated in the County of Clackamas, State of Oregon:

Being a part of the Donation Land Claim of Joseph P. Eagon and wife, in Township 2 South, Range 2 East, of the Willamette Meridian, and a part of the Donation Land Claim of J. D. Garrett and wife, in Townships 1 and 2 South, Range 2 East of the Willamette Meridian, in the County of Clackamas and State of Oregon, bounded and described as:

Beginning at an iron bolt driven in the Northerly boundary of that certain tract of land conveyed to J.E. Minard Black by Deed recorded in Book 107, Page 518, Deed Records, which bolt is on the Southwesterly side line of the right of way of the O. & C. R. R., South 65° 16' 30" East 399.6 feet distant from most Northerly corner of said Black tract, being also 108.84 feet North and 494.83 feet West of a basalt stone set at the intersection of the North boundary of Section 5, Township 2 South, Range 2 East, of the Willamette Meridian, with the East boundary of the J. D. Garrett Donation Land Claim; thence South 65° 16' 30" East tracing the Southwesterly line of said right of way 107.78 feet to an iron pipe and the true place of beginning of the tract of land to be described; thence continuing South 65° 16' 30" East tracing the Southwesterly line of said right of way 225 feet; thence in a Southerly direction 285 feet, more or less, to a point in the center of Foster County Road, said point being South 9° 32' East 31.32 feet and North 63° 44' East 160 feet from an iron pipe driven on the Northerly side of said Foster County Road; thence South 63° 44' West 160 feet to a point from which an iron pipe driven on the Northerly side of said road bears North 9° 32' West 31.32 feet; thence North 9° 32' West 451.90 feet to the said true point of beginning.

THE TRUE AND ACTUAL CONSIDERATION FOR THIS CONVEYANCE IS TWO HUNDRED SEVENTY-FIVE THOUSAND AND NO/100 DOLLARS (\$275,000.00). (See ORS 93.030).

Subject to:

Rights of the public to any portion of the Land lying within roads and highways.

Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: The City of Milwaukie, Oregon
 Purpose: Sewer
 Recording Date: February 26, 1974
 Recording No: 74-4805
 Recording Date: August ;6, 1974
 Recording No. 74-21906
 Affects: The Northeasterly 15 feet


Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: The City of Milwaukie, Oregon
 Purpose: Sewer
 Recording Date: January 10, 1975
 Recording No: 75-725
 Recording Date: May 3, 1977
 Recording No. 77-16475
 Affects: The North 185 feet of the East 10 feet

Fidelity National Title of Oregon 45141519356-07

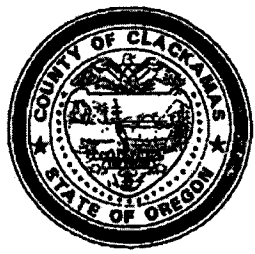
2/ce

Clackamas County Official Records 2012-046726
Sherry Hall, County Clerk

 \$58.00

01600509201200467260020039 07/26/2012 03:23:38 PM

D-D Cnt=1 Stn=25 LESLIE
\$10.00 \$5.00 \$10.00 \$16.00 \$17.00



**CLACKAMAS
COUNTY
RECORDING
DEPARTMENT
CERTIFICATE
PAGE**

**This page must be included
if document is re-recorded.
Do Not remove from original document.**

2/2

Clackamas County Official Records
Sherry Hall, County Clerk

2008-015141



\$36.00

03/04/2008 08:02:43 AM

D-D Cnt=1 Str=9 DIANNAW
\$10.00 \$16.00 \$10.00

After recording return to and until requested otherwise send all tax statements to:
Harmony Park Apartments, LLC
16479 SE Oak Meadows Court
Damascus, OR 97089

STATUTORY BARGAIN AND SALE DEED

This document is being re-recorded to correct the legal at the request of Chicago Title, previously recorded at Fee No. 2008-015141.

JAMES E. WILLIAMS and ANNEMIE WILLIAMS, husband and wife, Grantors, convey to HARMONY PARK APARTMENTS, LLC, an Oregon limited liability company, Grantee, the following described real property:

A part of the John D. Garrett Donation Land Claim in Township ¹2 South, Range ²2 East of the Willamette Meridian, in the County of Clackamas and State of Oregon, described as follows:

BEGINNING at an iron bolt driven in the Northerly boundary of that certain tract of land conveyed to J.E. Minard Black by deed recorded in Book 107, Page 518, Deed Records, which point is on the Southwesterly side line of the right of way of the Oregon and California Railroad, South 65°16'30" East 399.6 feet distant from the most Northerly corner of said tract, said beginning point being 108.84 feet North and 494.83 feet West of a basalt stone set at the intersection of the North boundary of Section 5, Township 2 South, Range 2 East of the Willamette Meridian with the East boundary of the J. D. Garrett Donation Land Claim, running thence South 65°16'30" East 107.78 feet tracing the Southwesterly side line of the Oregon and California Railroad right of way to an iron pipe; thence South 9°32' East 451.90 feet to a point in the center of the Foster Road which point an iron pipe driven on the Northerly side line thereof bears North 9°32' West 31.32 feet distant; thence tracing the center of said road, South 63°44' West 167.07 feet to an iron bolt; thence North 9°32' West 609.00 feet to a pipe driven on the Southwesterly side line of the right of way of the Oregon and California Railroad; thence tracing the Southwesterly side line of said right of way South 65°16'30" East 85.8 feet to a point of beginning.

EXCEPTING THEREFROM that portion in roads.

The true and actual consideration for this conveyance is other property or value which was either part or the whole consideration.

BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON TRANSFERRING FEE TITLE SHOULD INQUIRE ABOUT THE PERSON'S RIGHTS, IF ANY, UNDER ORS 197.352. THIS INSTRUMENT DOES NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS

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472512497512

Chicago Title

**CITY OF MILWAUKIE
PRE-APPLICATION CONFERENCE REPORT**



November 17, 2017

Ed Williams
Old Time Investments, Inc.
10117 SE Sunnyside Rd, #F545
Clackamas OR 97015

Re: Preapplication Report

Dear Ed:

Enclosed is the Preapplication Report Summary from your meeting with the City on November 2, 2017, concerning your proposal for action on property located at 6115 SE Harmony Rd.

A preapplication conference is required prior to submittal of certain types of land use applications in the City of Milwaukie. Where a preapplication conference is required, please be advised of the following:

- Preapplication conferences are valid for a period of 2 years from the date of the conference. If a land use application or development permit has not been submitted within 2 years of the conference date, the Planning Director may require a new preapplication conference.
- If a development proposal is significantly modified after a preapplication conference occurs, the Planning Director may require a new preapplication conference.

If you have any questions concerning the content of this report, please contact the appropriate City staff.

Sincerely,

Alicia Martin
Administrative Specialist II

Enclosure

cc: Cascadia Planning
Sisul Engineering
File

PRE-APPLICATION CONFERENCE REPORT

This report is provided as a follow-up to a meeting that was held on 11/2/2017 at 10:00AM

Applicant Name: Ed Williams

Company: Old Time Investments, Inc.

Applicant 'Role': Owner

Address Line 1: 16479 SE Oak Meadow Court

Address Line 2:

City, State Zip: Damascus OR 97089

Project Name: Harmony Rd Apartments

Description: Design Review for 14 unit multi-family apartments

ProjectAddress: 6115 SE Harmony Rd

Zone: R-2 with Natural Resource (NR) Overlay.

Occupancy Group:

ConstructionType:

Use: The proposed apartment building is an allowed use within the R-2 zone.

Occupant Load:

AppsPresent: Ed Williams, Steve Kay, Tom Sisul

Staff Attendance: David Levitan, Alex Roller, Jen Davidson, Matt Amos

BUILDING ISSUES

ADA: The building will need to meet all ADA standards. Parking spaces shall be provided at the rate of 1 ADA parking space for each 25 parking spaces provided, one of which will be a van accessible space.

Structural:

Mechanical:

Plumbing:

Plumb Site Utilities:

Electrical:

Notes:

Please note all drawings must be individually rolled. If the drawings are small enough to fold they must be individually folded.

FIRE MARSHAL ISSUES

- Fire Sprinklers:** A fully complaint NFPA 13 or 13r system will be required.
- Fire Alarms:** Alarms shall be provided as per Chapter 9 of the Oregon Structural Specialty Code (OSSC).
- Fire Hydrants:**
- Turn Arounds:**
- Addressing:**
- Fire Protection:**
- Fire Access:**
- Hazardous Mat.:**
- Fire Marshal Notes:** See attached.

PUBLIC WORKS ISSUES

- Water:** A 12-inch diameter City of Milwaukie water main provides service to the development property. Per code section 19.702.1, all of chapter 19.700 applies to the new construction. Per Code section 19.709, the engineering director shall review all proposed development subject to chapter 19.700 to evaluate the adequacy of existing public utilities to service the proposed development and determine whether new public utilities or an expansion of existing public utilities is warranted to ensure compliance with the City’s public utility requirements and standards. It has been determined that the existing water main is can adequately provide service to this site.
- Development requires installation of a new water service and meter to be in accordance with City Standards. The Water System Development Charge (SDC) is based on the size of water meter serving the property. The corresponding water SDC will be assessed with installation of a water meter. The building that was on this site was demolished more than 10 years from the time of application, so no water SDC credit will be available. The water SDC’s can be found in Milwaukie’s fee schedule section 12. The water SDC will be assessed and collected at the time the building permits are issued.
- Sewer:** An 8-inch diameter City of Milwaukie sewer main located in a 10-foot easement on the east side of the property provides service to the development property. Per code section 19.702.1, all of chapter 19.700 applies to the new construction. Per Code section 19.709, the engineering director shall review all proposed development subject to chapter 19.700 to evaluate the adequacy of existing public utilities to service the proposed development and determine whether new public utilities or an expansion of existing public utilities is warranted to ensure compliance with the City’s public utility requirements and standards. It has been determined that the existing sewer main is can adequately provide service to this site.
- There is a wastewater main on the east side of the property that is in a 10’ wide easement. The City is requiring that this main be extended towards Harmony Road to provide city maintenance crews access.

An alternative to the mainline extension is providing access to the downstream manhole that is located at the northeast corner of the development property. This access would be through an 8-foot wide cleared path through taxlot 2000 to the west to allow city crews access for regular maintenance. This pathway will need to be maintained regularly or at the request of our crews. A maintenance agreement will be established that is approved by both the City and the property owner. In this situation, the existing sewer main will not have to be extended, and can remain as is. A gate will be required for city crews to access the existing manhole next to the building.

Currently, the wastewater System Development Charge (SDC) is comprised of two components. The first component is the City's SDC charge of \$1,100 per wastewater unit, and the second component is the County's SDC for treatment of \$5,036 per apartment that the City collects and forwards to the County. Milwaukie's wastewater unit is equal to 16 fixture units derived from Table 7-3 of the Oregon Plumbing Specialty Code. The wastewater SDC will be assessed and collected at the time the building permits are issued.

Storm:

There is no Milwaukie storm system to connect to in Harmony Road. Site may outflow to Minthorn creek with approval of a storm water management plan submitted by a qualified professional engineer. The plan shall conform to Section 2 - Stormwater Design Standards of the City of Milwaukie Public Works Standards.

The storm water management plan shall demonstrate that the post-development runoff does not exceed the pre-development, including any existing storm water management facilities serving the development property. Also, the plan shall demonstrate compliance with water quality standards. The City of Milwaukie has adopted the City of Portland 2016 Stormwater Management Manual for design of water quality facilities.

All new impervious surfaces, including replacement of impervious surface with new impervious surfaces, are subject to the water quality standards. See City of Milwaukie Public Works Standards for design and construction standards and detailed drawings.

The storm SDC is based on the amount of new impervious surface constructed at the site. One storm SDC unit is the equivalent of 2,706 square feet of impervious surface. The storm SDC is currently \$845 per unit. This calculation includes parking and building roof. The storm SDC will be assessed and collected at the time the building permits are issued.

Street:

The proposed development fronts the north side of SE Harmony Road, an arterial street. This frontage has a right-of-way width of 60 feet, has a paved width of approximately 36 feet with curb on both sides and sidewalk improvements on the north side.

Frontage:

Per MMC 19.708.2 Milwaukie's minimum frontage improvements for an arterial is as follows:

- 6-foot setback sidewalk
- 3-foot landscape strip
- Curb and gutter
- 5-foot bike lane
- 11-foot travel lane

Improvements will be completed through Clackamas County's review process attached below. City Must approve county required improvements prior to construction for compliance with minimum City standards. If the county's requirements are less than our Milwaukie's minimums, then Milwaukie's standards will be followed.

Right of Way:

The minimum right-of-way components will fit in the existing right-of-way. Final dedication requirements will be determined by Clackamas County.

Driveways:

Applicant has proposed to gain access to SE Harmony Road through an access easement with the

property to the west. Clackamas County will determine whether the existing driveway may remain to serve as fire access.

Erosion Control: Per Code Section 16.28.020(C), an erosion control permit is required prior to placement of fill, site clearing, or land disturbances, including but not limited to grubbing, clearing or removal of ground vegetation, grading, excavation, or other activities, any of which results in the disturbance or exposure of soils exceeding five hundred square feet.

Code Section 16.28.020(E) states that an erosion control permit is required prior to issuance of building permits or approval of construction plans. Also, Section 16.28.020(B) states that an erosion control plan that meets the requirements of Section 16.28.030 is required prior to any approval of an erosion control permit. A grading permit will be required for this site if more than 50 cubic yards of soil is being moved.

Traffic Impact Study: Code Section 19.704.1(A) states that the City will determine whether a transportation impact study (TIS) is required. In the event the proposed development will significantly increase the intensity of use, a transportation impact study will be required. The City of Milwaukie Engineering Director will make this determination based on proposed preliminary subdivision design and the number of lots created.

The Engineering Director has determined that a TIS is not required for this development due to the existing classification of Harmony as an Arterial and no new access to Harmony being proposed.

PW Notes:

TRANSPORTATION SDC

The Transportation SDC will be based on the increase in trips generated by the new use per the Trip Generation Handbook from the Institute of Transportation Engineers. The SDC for transportation is \$1,921 per trip generated.

The building that was on this site was demolished more than 10 years from the time of application, so no transportation SDC credit will be available. This proposal will be classified as Apartment according to the ITE Trip Generation Manual 9th Edition. Trip generation is .62 trips per dwelling unit one hour between 4 and 6 pm.

PARKS & RECREATION SDC

The parks & recreation System Development Charge (SDC) is triggered when application for a building permit on a new dwelling is received. Currently, the parks and recreation SDC for each Multi-family unit (excluding 1 bedroom) is \$3,608.00. The 1 bedroom rate is 50% of the multi-family rate, 1,804.00. The parks and recreation SDC will be assessed and collected at the time the building permits are issued.

PLANNING ISSUES

Setbacks: Setback standards can be found in MMC Table 19.302.4. The setbacks for the R-2 zone are as follows: Front = 15 feet, Rear = 15 feet, Side = 5 feet. Front and rear setbacks can be reduced up to 25% through a Type II variance, while side yard setbacks can be reduced up to 40% through a Type II variance. Larger variations would require a Type III variance.

The width of the vegetated corridor surrounding Minthorn Creek (measured from top of bank) and the delineated wetland (measured from delineated edge) is 50 feet.

Landscape: The minimum required vegetation for the site is 15% of the total lot area. At least half of the minimum required vegetation must be suitable for outdoor recreation by residents. As least 40% of the front yard shall be vegetated, as illustrated in Figure 19.302.5.D.

To allow for the proposed 4th story, a minimum of 25% of the site must be retained in vegetation (the 15% minimum for the base 3 story limit and an additional 10% for the proposed fourth story). Given the size and vegetated nature of the northern half of the site, this will not be an issue.

Parking:

Parking standards are included in MMC 19.600. For apartments under 800 sf, a minimum of 1 space is required per unit. For apartments over 800 sf, a minimum of 1.25 spaces are required per unit. Based on your current proposal, you will require 17 units, at least one of which must be ADA accessible for vans.

Parking lot landscaping requirements are included in MMC 19.606.2, including dimension and planting requirements. Both interior (25 square feet per space) and perimeter landscaping (6' wide along western property line) is required for the site. Wheel stops or curbs are required, and must prevent vehicles from encroaching into required pedestrian and landscape areas. Lighting is required for parking areas with more than 10 spaces, as detailed in MMC 19.606.3.

There are no compact parking space standards in Milwaukie. Any reduction in parking space size would require a Type III variance.

Transportation Review: See comments under Engineering Department review.

Application Procedures: Development Review and Multifamily Design Guidelines and Standards: A Development Review application is required to illustrate your conformance with MMC 19.906 and the Multifamily Housing standards/guidelines (MMC 19.505.3). You may choose to go through the Type I Design Standard (Objective Process) or Type II Design Guideline (Discretionary Process) for development review, as detailed in Table 19.505.3.D. A project must utilize one process or the other (if it can't meet one design standard, it must use the design guidelines).

The table covers the differences in the standards and guidelines for things such as open space (public and private), pedestrian circulation, parking, building orientation, façade design, materials, landscaping, screening, recycling areas, privacy, and safety. Regarding your question about the new building's ability to use the existing waste and recycling areas at 5989 SE Harmony Rd, this is something that can be discussed. The design standard calls for recycling areas to be located at least as close as the trash facility, while the design guideline notes that the recycling areas must provide convenient access to residents. I have requested input from Waste Management staff.

Natural Resources Review

Type II Boundary Water Quality Resource (WQR) Boundary Verification: The WQR requires a Type II boundary verification (MMC 19.402.15.A.2) for the protected water features (creek and wetland).

Type III WQR Discretionary Review: Disturbance of the WQR is subject to Type III general discretionary review (MMC 19.402.12), which requires an Impact Evaluation and Alternatives Analysis and must meet the Approval Criteria to avoid, minimize, and/or mitigate impacts to the WQR.

Fees for land use applications are as follows:

- Type I: \$200
- Type II: \$1,000
- Type III: \$2,000

There is a 25% discount for concurrent applications (not applied to the most expensive application)

Natural Resource Review: Habitat Conservation Area (HCA)

The NR Administrative Map shows no Habitat Conservation Area (HCA) on the map, as Metro's Title 3/13 inventories showed the site to be covered by Class 3 upland habitat, which is not considered HCA. Since the NR Administrative Map is assumed to be correct, there is no need to evaluate HCA disturbance.

Water quality Resource (WQR)

Your plans indicate the presence of Minthorn Creek as well as a 5,410 sf wetland (Wetland A) to the north of the creek. Based on Metro data and the elevations, there appear to be some steep slopes exceeding 25% for a portion of the area near the creek, but these slopes are less than 150' in length. Assuming this is correct, the vegetated corridor for both the creek (measured from top of bank) and wetland (measured from delineated edge) would be 50' in width.

The WQR requires a Type II boundary verification (MMC 19.402.15.A.2) for the protected water features (creek and wetland).

Disturbance of the WQR is subject to Type III general discretionary review (MMC 19.402.12), which requires an Impact Evaluation and Alternatives Analysis and must meet the Approval Criteria to avoid, minimize, and/or mitigate.

In response to your question, MMC 19.402.15.A.2 requires that the wetland report be approved by DSL, even though it is on the north side of the property. City code requires review and concurrence from DSL so that the NR Administrative Map can be updated properly.

The natural resources report, wetland delineation, and mitigation plan for the WQR disturbance will require review by the City's third-party consultant (ESA), which requires a \$3,000 deposit, per the FY 2018 Fee Schedule .

Moving the building to the south (towards Harmony Rd) would reduce (minimize) the WQR disturbance. This should be considered as part of the natural resources alternatives analysis.

Yard setbacks may be adjusted up to 10% without a variance, and a proposed variance that seeks to limit disturbance within the WQR would likely be looked upon favorably, depending on the scope of the variance request.

Lot Geography:

The site consists of two parcels that are a combined 1.33 acres and in the shape of a trapezoid. The western side is longer than, but generally parallel to, the eastern side. The northern half of the property is covered by Minthorn Creek and a recently delineated wetland, leaving the southern portion developable.

Access to the site is proposed to come from the southwest corner of the site, via an access easement through the property to the west (5989 Harmony).

Planning Notes:

The minimum density for the site is 11.6 units/acre, or 15 units, per Table 19.302.4. Density calculations are included in MMC 19.202.4. Minimum density deducts floodways, ROW deductions, and publicly or commonly owned open space.

Permitted sign types and sign standards can be found in Table 14.16.010.

The maximum building height is 4 stories or 55 feet: a base 3 stories/45 feet, plus another story/10 feet for maintaining at least 25% of the site as vegetation. Building height measurements are covered in MMC 19.202.2.B.

The side yard height plane limit - the maximum height allowed above ground at the required side yard (5 feet) - is 25 feet. From the required setback, the height plane can rise at a 45 degree angle, and the building must fit within that area. Exceptions to the side yard height plane limit are listed in MMC 19.501.3, with limited exceptions available for roof overhangs or eaves, gable ends of a roof, and dormers.

For the City's initial review, the applicant should submit 5 complete copies of the application, including all required forms and checklists. A determination of the application's completeness will be issued within 30 days. If deemed incomplete, additional information will be requested. If deemed complete, additional copies of the application may be required for referral to other departments, Neighborhood District Association (NDA), and other relevant parties and agencies. City staff will inform the applicant of the total number of copies needed.

For Type III review, once the application is deemed complete, a public hearing with the Planning Commission will be scheduled. Staff will determine the earliest available date that allows time for preparation of a staff report (including a recommendation regarding approval) as well as provision of the required public notice to property owners and residents within 300 ft of the subject property, at least 20 days prior to the public hearing. A sign giving notice of the application must be posted on the subject property at least 14 days prior to the hearing.

Type III applications are quasi-judicial in nature and are decided by the Planning Commission at a public hearing. The Planning Commission hears land use applications on the second and fourth Tuesdays of every month, and completed applications need to be submitted to the Planning Department no later than 45 days prior to the target Planning Commission hearing. In general, staff recommends that applications be submitted one to two weeks before the 45-day deadline in order to ensure that there is time to make the applications complete if they are initially deemed incomplete. Once the Planning Commission renders a decision, there is a fifteen calendar-day appeal period. Permits submitted during the appeal period may be reviewed but are not typically approved until the appeal period has ended.

The preapplication conference is valid for purposes of submitting future land use applications as described in MMC 19.1002.4. A preapplication conference is valid for 2 years.

The full zoning code is available online at:

ADDITIONAL NOTES AND ISSUES

County Health Notes:

Other Notes:

This is only preliminary preapplication conference information based on the applicant's proposal and does not cover all possible development scenarios. Other requirements may be added after an applicant submits land use applications or building permits. City policies and code requirements are subject to change. If you have any questions, please contact the City staff that attended the conference (listed on Page 1). Contact numbers for these staff are City staff listed at the end of the report.

Sincerely,

City of Milwaukie Development Review Team

BUILDING DEPARTMENT

Samantha Vandagriff - Building Official - 503-786-7611

Stephanie Marcinkiewicz

- Inspector/Plans Examiner - 503-786-7613

ENGINEERING DEPARTMENT

Chuck Eaton - Engineering Director - 503-786-7605

Alex Roller - Engineering Tech II - 503-786-7695

COMMUNITY DEVELOPMENT DEPARTMENT

Alma Flores - Comm. Dev. Director - 503-786-7652

Leila Aman - Development Manager - 503-786-7616

Alicia Martin - Admin Specialist - 503-786-7600

PLANNING DEPARTMENT

Dennis Egner - Planning Director - 503-786-7654

David Levitan - Senior Planner - 503-786-7627

Brett Kelter - Associate Planner - 503-786-7657

Vera Kolas - Associate Planner - 503-786-7653

Mary Heberling - Assistant Planner - 503-786-7658

CLACKAMAS FIRE DISTRICT

Mike Boumann - Lieutenant Deputy Fire Marshal - 503-742-2673

Matt Amos - Fire Inspector - 503-742-2661

Clackamas County Fire District #1

Fire Prevention Office



E-mail Memorandum

To: City of Milwaukie Planning Department
From: Matt Amos, Fire Inspector, Clackamas Fire District #1
Date: 11/17/2017
Re: 6115 SE Harmony Rd. 17-019PA

This review is based upon the current version of the Oregon Fire Code (OFC), as adopted by the Oregon State Fire Marshal's Office. The scope of review is typically limited to fire apparatus access and water supply, although the applicant must comply with all applicable OFC requirements. When buildings are completely protected with an approved automatic fire sprinkler system, the requirements for fire apparatus access and water supply may be modified as approved by the fire code official. The following items should be addressed by the applicant:

COMMENTS:

A Fire Access and Water Supply plan is required for subdivisions and commercial buildings over 1000 square feet in size or when required by Clackamas Fire District #1. The plan shall show fire apparatus access, fire lanes, fire hydrants, fire lines, available fire flow, FDC location (if applicable), building square footage, and type of construction. The applicant shall provide fire flow tests per NFPA 291, and shall be no older than 12 months. Work to be completed by experienced and responsible persons and coordinated with the local water authority.

Access:

- 1) Provide address numbering that is clearly visible from the street.
- 2) No part of a building may be more than 150 feet from an approved fire department access road.
- 3) The inside turning radius and outside turning radius for a 20' wide road shall not be less than 28 feet and 48 feet respectively, measured from the same center point.
- 4) Provide an approved turnaround for dead end access roads exceeding 150 feet in length.
- 5) Buildings exceeding 30 feet in height shall require extra width and proximity provisions for aerial apparatus.

- 6) Access streets between 26 feet and less than 32 feet in width must have parking restricted to one side of the street. Access streets less than 26 feet in width must have parking restricted on both sides of the street. No parking restrictions for access roads 32 feet wide or more.

Water Supply

- 1) Fire Hydrants, Commercial Buildings: Where a portion of the building is more than 400 feet from a hydrant on a fire apparatus access road, as measured in an approved route around the exterior of the building, on-site fire hydrants and mains shall be provided.
Note: This distance may be increased to 600 feet for buildings equipped throughout with an approved automatic sprinkler system.
- 2) All new buildings shall have a firefighting water supply that meets the fire flow requirements of the Fire Code. Maximum spacing between hydrants on street frontage shall not exceed 500 feet. Additional private on-site fire hydrants may be required for larger buildings. Fire sprinklers may reduce the water supply requirements.
- 3) The fire department connection (FDC) for any fire sprinkler system shall be placed as near as possible to the street, and within 100 feet of a fire hydrant.

Note:

Comments may not be all inclusive based on information provided.

PRE-APPLICATION INFORMATION FROM DEVELOPMENT ENGINEERING

All information is considered informal, based on current Zoning and Development Ordinance requirements, current Roadway Standards requirements, and current Comprehensive Plan requirements. The information presented here is subject to change as revisions are made to the aforementioned documents and in the formal Design Review Process. Prior to the submittal of a Design Review application, the applicant is encouraged to contact staff to insure that these preapplication comments reflect the current standards.

FILE NO. 17-019 PA (City of Milwaukie)

PROJECT: Harmony Park Apartments (14-unit addition)

LEGAL: T1S., R 2E., Section 31D, Tax Lot 2200

DATE: November 2, 2017

Engineering staff: Robert Hixson 503-742-4708
roberth@clackamas.us

Deana Mulder 503-742-4710
deanam@clackamas.us

- 1) A large amount of information is provided in these written comments. The applicant is encouraged to meet with Engineering staff after the information provided here has been read and considered. A follow up meeting would likely help clarify issues and may result in cost savings to the applicant. It is staff's desire to minimize applicant effort and expense and would welcome the opportunity to meet another time to answer questions and provide guidance in the preparation of the applicant's land use application.
- 2) The development of a project has several phases requiring Engineering staff review. The first phase is this preapplication meeting where preliminary information is provided allowing applicants to better understand the Engineering requirements and applicant's expenses associated with a proposed project.

Prior to a submittal for Design Review, Engineering staff is available to assist the applicant in the development of the plans to help insure that the application is complete and note concerns that may affect the application.

The next phase is Engineering staff's review of a project. This is typically performed after a formal Design Review application is submitted by an applicant and Planning staff provides notice to Engineering staff of the proposed project. At this phase, Engineering staff provides written comments to Planning staff and often recommends conditions of approval for incorporation into a land use decision.

Following a land use approval of a proposal by Planning staff or a Hearings Officer, typically with conditions, Engineering staff offers an opportunity to applicants to meet with Engineering staff to review conditions of approval during the appeal period. This allows applicants a clearer understanding of the conditions of approval, how those conditions financially impact the applicant's proposal and also allows the applicant to better understand the appropriate level of detail for the engineering that will be necessary in the next phase of a project. Furthermore, the sequencing of requirements to obtain building permits, record plats or obtain a certificate of occupancy may be discussed. Contact Deana Mulder, 503-742-4710, to discuss the aforementioned issues.

Engineering is then involved in the next phase of the project. In this phase, applicants typically submit detailed engineered construction plans for review and approval. Once the plans are approved, a permit for construction activities may be issued. The detailed construction plans typically include all required street and frontage improvements, access improvements, parking improvements, and site circulation improvements for vehicles, bicycles and pedestrians. These plans are typically provided for all commercial, industrial, multifamily and conditional use applications.

During construction, an Engineering inspector will visit the site to monitor the work to help insure that the construction is in accordance with the conditions of approval. When the applicant believes all necessary work has been completed, the applicant would request a final inspection and Engineering staff would then review the file and inspect the site to determine if all conditions of approval had been met or if additional work was still needed to achieve compliance with all of the Engineering related conditions of approval.

- 3) Based on the currently available preliminary information, this proposal may not require the submittal of a traffic study.
- 4) For the Design Review application, the applicant shall provide revised, more detailed street, site, grading and drainage plans in conformance with the requirements for preliminary development plans. This shall include, but is not limited to right-of-way lines verified by a professional survey, edges of pavements, curbs, and outlines of existing structures on adjacent lots. All illustrated features shall be dimensioned.
- 5) Applicant shall obtain a Development Permit from the County Engineering Section prior to the issuance of a Building Permit. The applicant shall pay a Development Permit fee in accordance with the current fee structure. Minimum permit fee is \$1,274.00. Issuance of a Development Permit is dependent upon the formal approval, by Engineering staff, of a set of plans in compliance with Roadway Standards section 140. These plans shall also illustrate road or street frontage features, including any existing and proposed pavement striping for a distance of 200 feet beyond the limits of the property lines, and the plans shall be signed and stamped by a Professional Engineer registered in the State of Oregon.
- 6) Applicant shall dedicate right-of-way as necessary to provide for a right-of-way width on Harmony Road which provides a minimum of six inches behind the back of the new separated sidewalk.
- 7) Applicant shall grant an eight-foot wide easement for signs, slopes, and public utilities along the entire Harmony Road frontage.
- 8) Applicant shall design and construct improvements along the entire site frontage of Harmony Road. These improvements shall consist of up to a half-street improvement, standard curb or curb and gutter (existing curb line offset to be maintained), and a six-foot wide unobstructed sidewalk behind a minimum five-foot wide landscape strip with street trees. Onsite transitions shall be designed and constructed to connect the existing offsite curb tight sidewalks to the new separated sidewalk. The existing driveway drop along the site frontage shall be removed and replaced with matching curb and landscape strip. If mailboxes, fire hydrants, utility poles, etc, are located within the limits of the sidewalk, the obstruction shall be relocated or removed.
- 9) Applicant shall provide and maintain adequate intersection sight distances and stopping sight distances at the driveway approach intersection with Harmony Road in accordance with Roadway Standards section 240. Adequate intersection sight distance for drivers turning left into the site shall also be provided and maintained. In addition, no plantings at maturity, retaining walls, embankments, fences or any other objects shall be allowed to obstruct vehicular sight distance. **Plans submitted in anticipation of issuance of a Development Permit shall include a plan and profile sight distance exhibit, based on survey data, illustrating sight lines for intersection sight distances and stopping sight distances.** Minimum intersection sight distances shall be 500 feet both easterly and westerly along Harmony Road measured 14.5 feet back from the edge of the travel lane at the driveway intersection with Harmony Road. Minimum stopping sight distances shall be in accordance with Roadway Standards section 240 requirements with appropriate grade corrections in accordance with AASHTO requirements.

Intersection sight distance is measured from an observation driver's eye height of 3.5 feet (7.6 feet for trucks) above the driveway surface to an object height of 3.5 feet, located in the center of the oncoming travel lane, and typically made from an observation point located 14.5 feet back from the edge of the travel lane for drivers preparing to exit the site and enter onto a road. The top of the 3.5-foot tall object shall be visible for the entire required intersection sight distance from the observation point out to the minimum required intersection sight distance.

Sight distance measurements for stopping sight distance are made from an observation driver's eye height of 3.5 feet (7.6 feet for trucks) above the travel lane surface to an object height of 2 feet, located in the middle of the same lane as the driver. The top of the 2 foot tall object shall be visible for the entire required stopping sight distance from the observation point out to the minimum required stopping sight distance.

Intersection sight distance for left turning drivers exiting the road and entering the site is measured from an observation driver's eye height of 3.5 feet (7.6 feet for trucks) above the pavement surface to an object height of 3.5 feet, located in the middle of the oncoming travel lane. The top of the 3.5 foot tall object shall be visible for the entire required intersection sight distance from the observation point out to the minimum required intersection sight distance.

Sight distance requirements are based on the *Clackamas County Roadway Standards* and the American Association of State Highway and Transportation Officials (AASHTO) 2011 publication, "A Policy on Geometric Design of Highways and Streets."

- 10) Applicant shall comply with County Roadway Standards clear zone requirements in accordance with Roadway Standards subsection 245.
- 11) Following Design Review approval, but prior to final acceptance of the project and release of performance surety, applicant shall submit, at time of initial paving, paper as-built plans for all improvements within the Harmony Road right-of-way showing all construction changes, added and deleted items, location of utilities, etc. A professional engineer, registered in the state of Oregon, shall stamp and sign as-built plans. Any plans for signals, signing and striping require both a paper copy (maximum size 11" x 17") and a .dwg version of the as-builts for our Traffic Engineering section.
- 12) Following Design Review approval, plans shall be designed and stamped by a Professional Engineer registered in the State of Oregon.
- 13) Prior to certificate of occupancy, the applicant shall provide an Engineer's cost estimate to Clackamas County Engineering for any unfinished improvements required by conditions of approval. The estimate shall be submitted for review and approval of quantities of asphalt concrete, aggregates, curbs, sidewalks and any other required improvements and associated construction costs. A performance bond for an amount determined from the cost estimate is typically required to insure the construction of required improvements.
- 14) Plans shall note that "Separate Utility Placement Permits" are required from Clackamas County Engineering when utility connections within the right-of-way of Harmony Road are proposed.
- 15) Prior to Building Permit approval, the right-of-way dedication (if needed) and the sign, slope, and public utility easement shall be provided to Clackamas County DTD, Engineering, for review and recording.
- 16) Prior to commencement of any work, including grading, and prior to issuance of Building and Street Construction permits, the contractor shall:
 - a) Provide a traffic control plan for review and approval from Clackamas County's Engineering Office.
 - b) Provide a certificate of liability insurance, naming the County as additionally insured.
 - c) Obtain separate "Utility Placement Permits" for utility installations within the County right-of-way. The applicant shall obtain these permits from the Engineering office prior to the issuance of a Building Permit or the Development Permit.
- 17) Plans should list the utilities serving this site and their phone numbers.
- 18) Prior to certificate of occupancy, applicant shall provide a performance guarantee in the form of a performance bond for the Development Permit in the amount of 125% of the approved Engineer's cost estimate for the incomplete improvements within the Harmony Road right-of-way.

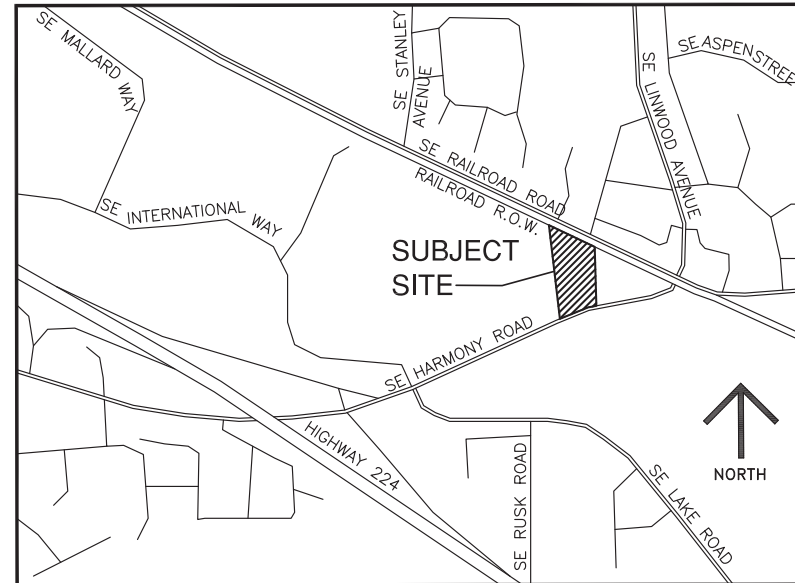
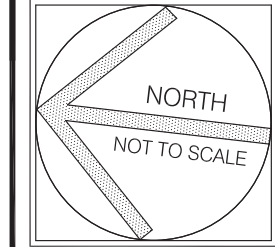
19) The use of public rights-of-way for construction vehicle and materials staging is not authorized by the Roadway Standards and poses a potentially deleterious effect of the proposed use, because it contributes to congestion, reduces sight distance, and occupies shoulders intended for emergencies and other purposes. To protect the public from such effects, the applicant shall be required to submit a construction vehicle management and staging plan for review and approval by the County DTD, Construction and Development Section, before the County issues a Development Permit. The plan shall show that the construction vehicles and materials will not be staged or queued-up on improved public streets and shoulders without specific authority from DTD for that purpose.

PRELIMINARY DEVELOPMENT PLANS

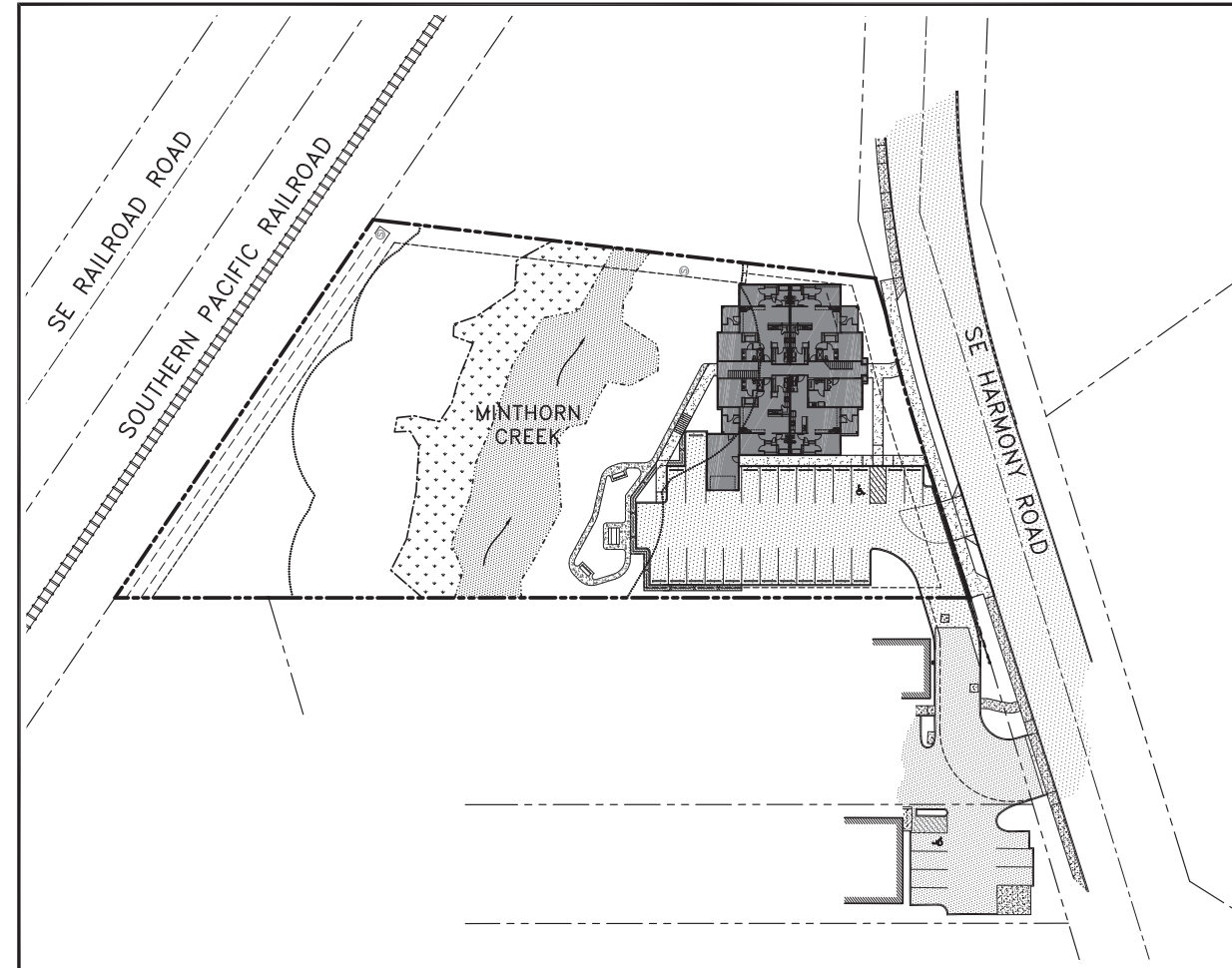
HARMONY PARK TOWNHOMES PH II

MILWAUKIE, ORE.

Cascadia
 Planning + Development Services
 PO Box 1920
 Silverton, Oregon 97381
 503-804-1089
 steve@cascadiapd.com
 www.cascadiapd.com



VICINITY MAP



SITE MAP

INDEX OF DRAWINGS

- P-1 COVER SHEET
- P-2 EXISTING CONDITIONS PLAN
- P-3 AERIAL PHOTOGRAPH/LAND USE PLAN
- P-4 PRELIMINARY SITE PLAN
- P-5 WATER QUALITY RESOURCE IMPACTS PLAN
- P-6 PARKING LOT/WQR PLANTING AREAS PLAN
- C-1 PRELIMINARY CIVIL SITE PLAN
- C-2 PRELIMINARY UTILITY PLAN
- C-3 PRELIMINARY GRADING/EROSION AND SOIL CONTROL/
CONSTRUCTION MANAGEMENT PLAN
- A-1 APARTMENT BUILDING ELEVATIONS
- A-2 APARTMENT BUILDING FLOOR PLANS

CITY OF MILWAUKIE LAND USE APPLICATION:
HARMONY PARK TOWNHOMES PH II

T.L. 2200 / T.M. 1S2E31D
 CLACKAMAS COUNTY, OREGON

6115 SE HARMONY ROAD
 MILWAUKIE, OR 97222

COVER SHEET
 MAY 24, 2018

REVISIONS



P-1

SHEET 1 of 11

APPLICANT / PROPERTY OWNER

HPA 2, LLC
 10117 SE SUNNYSIDE ROAD, SUITE 545
 CLACKAMAS, OR 97015
 702-234-9961
 CONTACT: ED WILLIAMS

CIVIL ENGINEER

SISUL ENGINEERING
 375 PORTLAND AVENUE
 GLADSTONE, OR 97027
 503-657-0188
 CONTACT: TIM SISUL, PE

APPLICANT'S REPRESENTATIVE

CASCADIA PLANNING + DEVELOPMENT SERVICES
 PO BOX 1920
 SILVERTON, OR 97038
 503-804-9294
 CONTACT: STEVE KAY, AICP

ENVIRONMENTAL CONSULTANT

SWCA ENVIRONMENTAL CONSULTANTS
 1220 SW MORRISON STREET, SUITE 700
 PORTLAND, OR 97201
 503-224-0333
 CONTACT: MIRTH WALKER, PWS

ARCHITECTURAL DESIGNER

CREATIONS NORTHWEST
 2500 WILLAMETTE FALLS DRIVE, SUITE 207
 WEST LINN, OR 97068
 503-485-1836
 CONTACT: ROBERT HORNADAY

LAND SURVEYOR

SUMMIT LAND SURVEYORS
 12950 SW PACIFIC HIGHWAY, SUITE 255
 TIGARD, OR 97223
 503-928-5589
 CONTACT: JOHN WADE, PLS

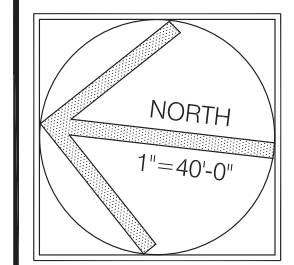
SURVEY LEGEND - EXISTING FEATURES

	CONCRETE WALL		CATCH BASIN / AREA DRAIN
	RAIL ROAD		SANITARY SEWER MANHOLE
	FENCE		UTILITY GUY POLE
	MINOR CONTOUR		UTILITY GUY WIRE
	MAJOR CONTOUR		ELECTRIC VAULT
	WETLAND DELINEATION		COMMUNICATIONS PEDESTAL
	SANITARY SEWER LINE		DECIDUOUS TREE
	GAS LINE		EVERGREEN TREE
	WATER LINE		SURVEY FOUND MONUMENT
	WATER METER/SERVICE		
	WATER VALVE		

GENERAL NOTES:

1. BENCHMARK INFORMATION. 3-1/2" BRONZE DISK IN SIDEWALK PER USBT 2001-040. BEING THE NORTHEAST CORNER OF JOHN GARRETT DLC NO. 61, ALSO BEING THE SOUTHEAST CORNER OF JOHN GARRETT DLC NO. 38 ON THE NORTH LINE OF SECTION 5. SEE CLACKAMAS COUNTY SN 2004-356 SHEET 4 OF 14. ELEVATION = 85.30'
2. THE BOUNDARY DEPICTED HERE ON IS PRELIMINARY AND IS SUBJECT TO CHANGE. IF ADDITIONAL MONUMENTS ARE FOUND ALONG THE NORTH LINE, THE BOUNDARY RETRACEMENT WILL BE REVISED ACCORDINGLY.
3. THE PURPOSE OF THIS SURVEY WAS TO PROVIDE A TOPOGRAPHIC BASE MAP OF TAX LOT 2200 TAX MAP 1S 2E 31D SHOWING EXISTING CONDITIONS ALONG WITH THE WETLAND DELINEATION AND MARKERS. THE AREA NORTH OF THE HEAVY VEGETATION DEMARKATION HAS NOT BEEN ACCURATELY SURVEYED, OTHER THAN THE WETLAND MARKERS DEPICTED HEREON.
4. AS OF THE DATE OF THIS MAPPING, THERE WERE NO UNDERGROUND UTILITY PAINT MARKINGS TO MAP THE SUBSURFACE UTILITIES.
5. MANHOLES SHOWN HEREON ARE TO CENTER OF MANHOLE LID, NOT CENTER OF STRUCTURE.

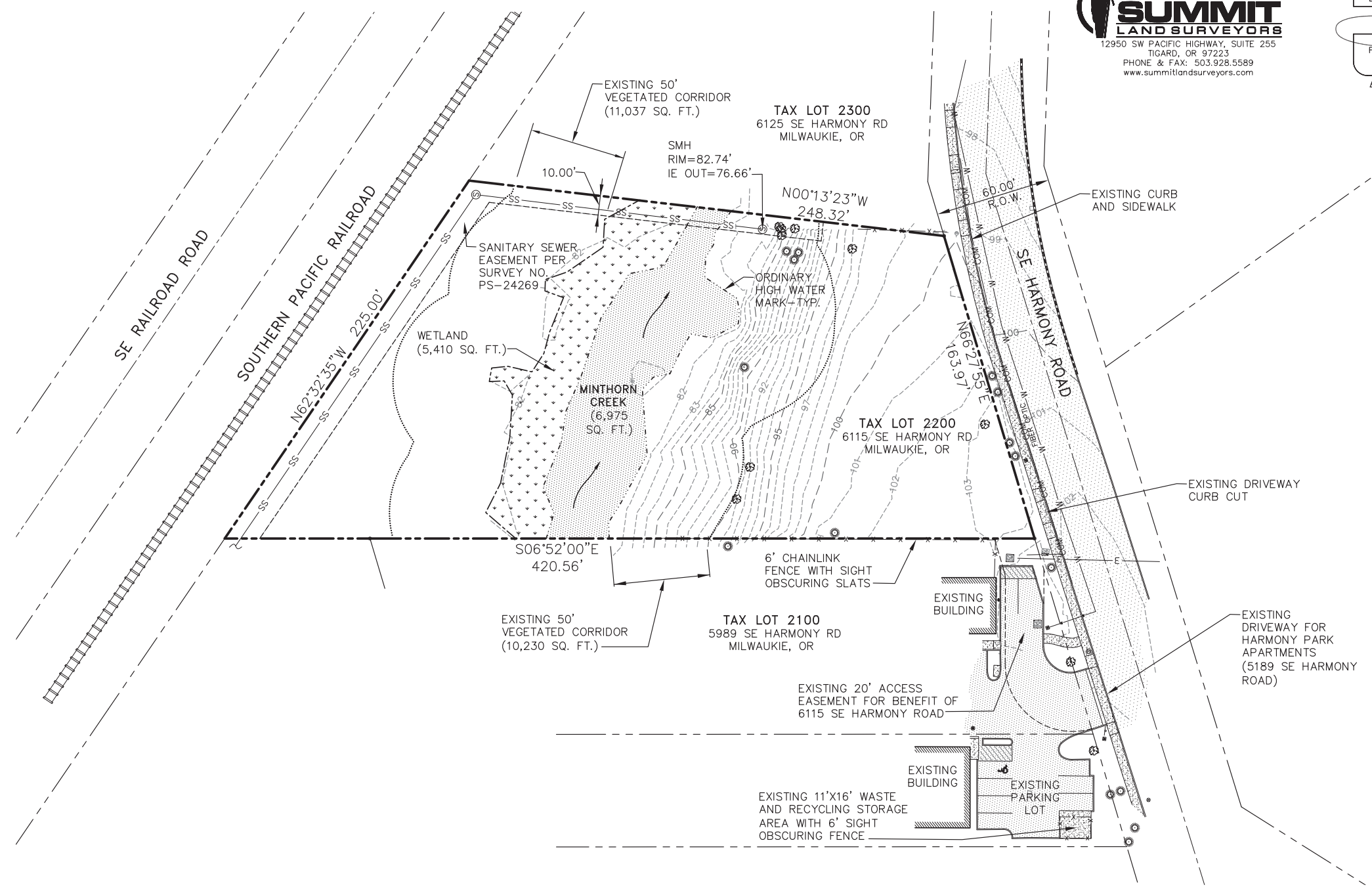
Cascadia
 Planning + Development Services
 PO Box 1920
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 503-804-1089
 steve@cascadiapd.com
 www.cascadiapd.com



SUMMIT
 LAND SURVEYORS
 12950 SW PACIFIC HIGHWAY, SUITE 255
 TIGARD, OR 97223
 PHONE & FAX: 503.928.5589
 www.summitlandsurveyors.com

REGISTERED
 PROFESSIONAL
 LAND SURVEYOR

OREGON
 FEBRUARY 08, 2000
 JOHN R. WADE
 59999 LS
 EXPIRES: 06/30/18



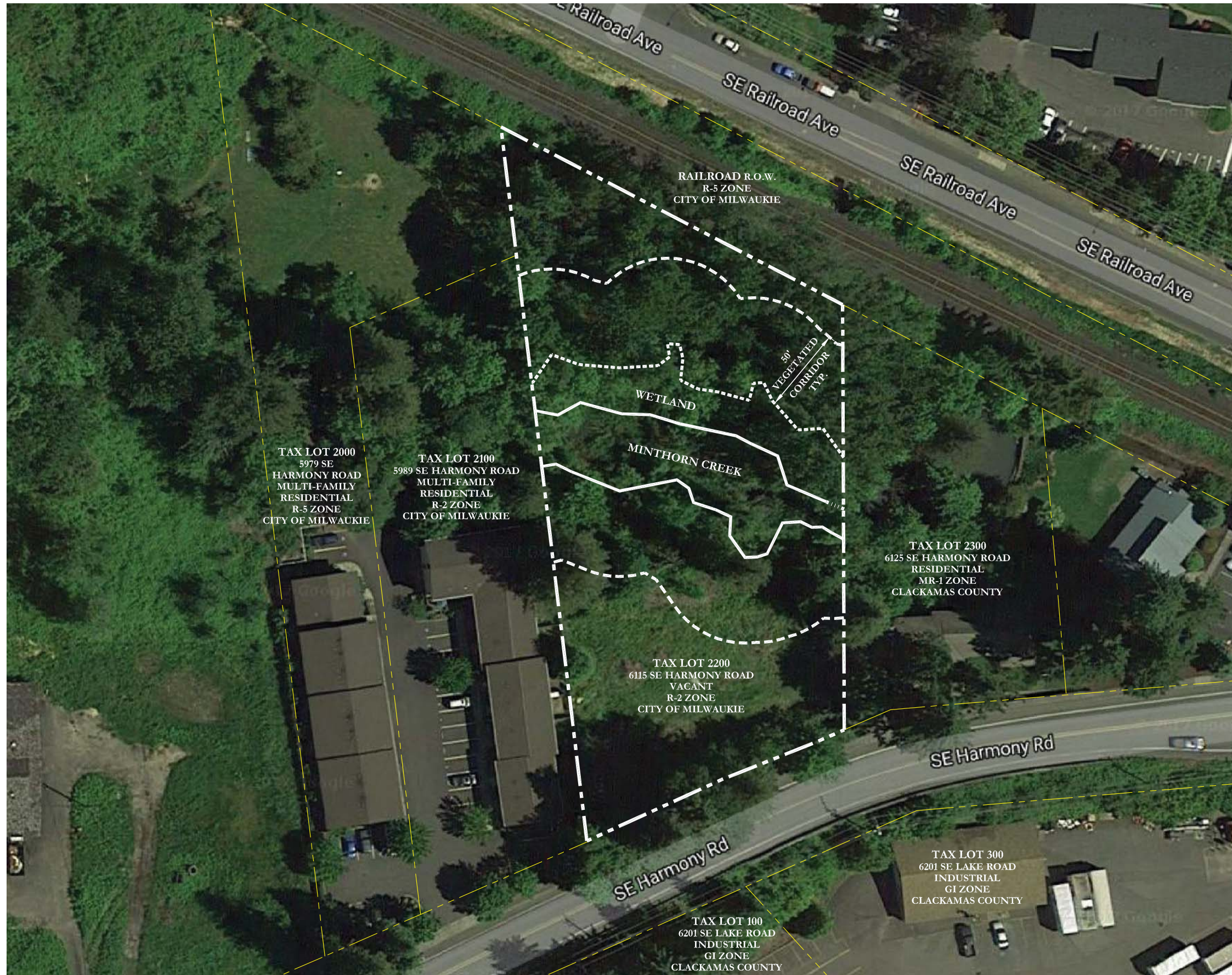
CITY OF MILWAUKIE LAND USE APPLICATION:
HARMONY PARK TOWNHOMES PH II
 6115 SE HARMONY ROAD
 MILWAUKIE, OR 97222

T.L. 2200 / T.M. 1S2E31D
 CLACKAMAS COUNTY, OREGON

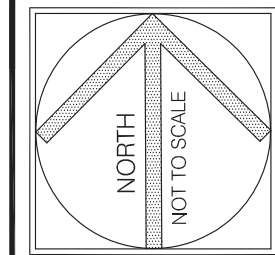
EXISTING CONDITIONS
 MAY 24, 2018

REVISIONS

P-2
 SHEET 2 OF 11



Cascadia
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 PO Box 1920
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 503-804-1089
 steve@cascadiapd.com
 www.cascadiapd.com

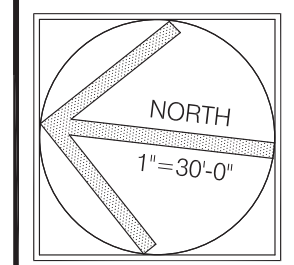


CITY OF MILWAUKIE LAND USE APPLICATION:
HARMONY PARK TOWNHOMES PH II
 T.L. 2200 / T.M. 1S2E31D
 CLACKAMAS COUNTY, OREGON
 6115 SE HARMONY ROAD
 MILWAUKIE, OR 97222

AERIAL PHOTO/
 LAND USE PLAN
 MAY 24, 2018

REVISIONS
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P-3
 SHEET 3 OF 11

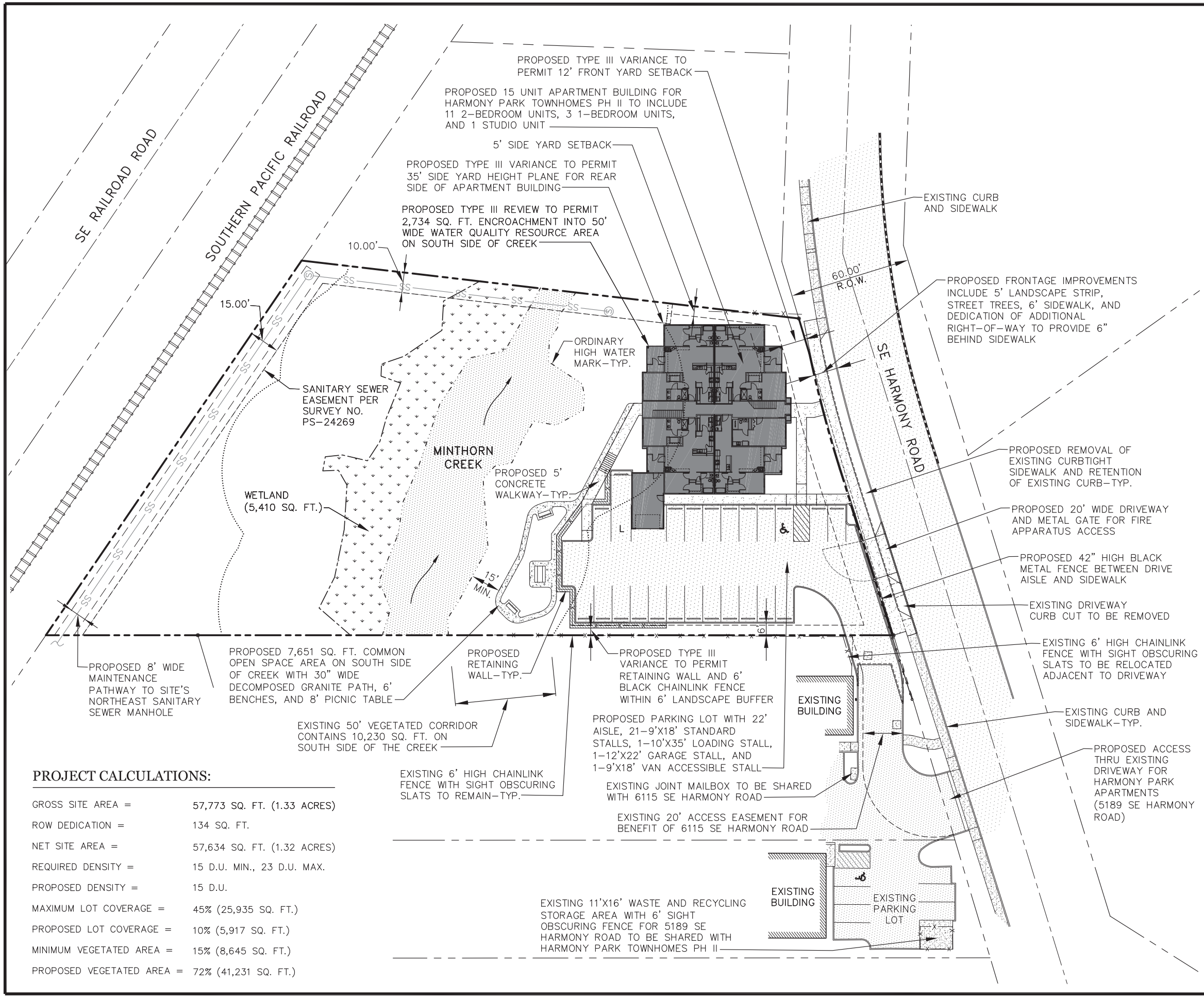


CITY OF MILWAUKIE LAND USE APPLICATION:
HARMONY PARK TOWNHOMES PH II
 T.L. 2200 / T.M. 1S2E31D
 CLACKAMAS COUNTY, OREGON
 6115 SE HARMONY ROAD
 MILWAUKIE, OR 97222

PRELIMINARY SITE PLAN
 MAY 24, 2018

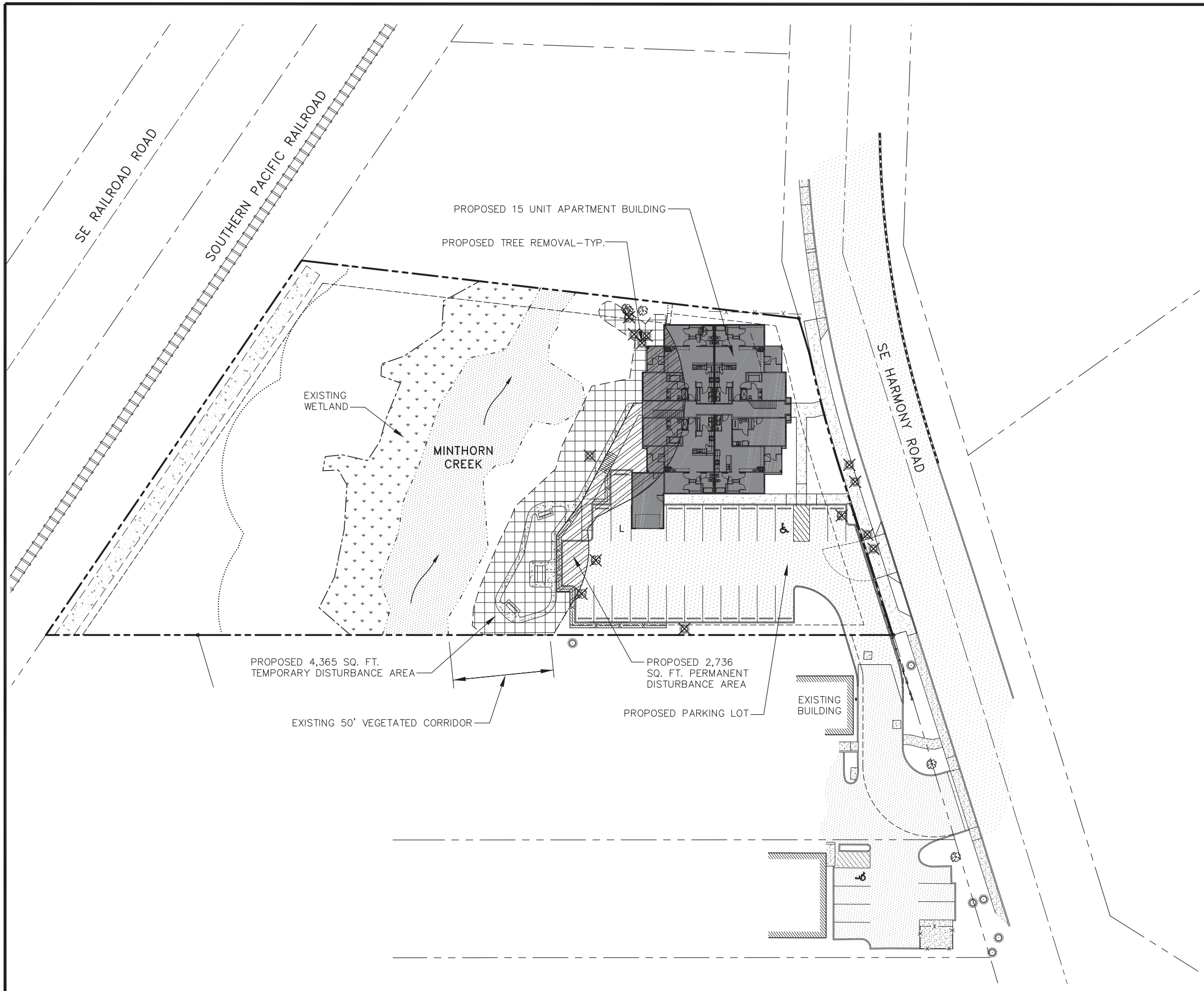
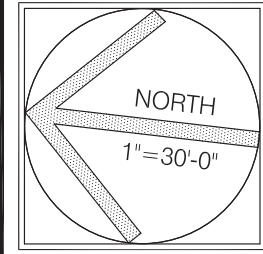
REVISIONS
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P-4
 SHEET 4 OF 11



PROJECT CALCULATIONS:

GROSS SITE AREA =	57,773 SQ. FT. (1.33 ACRES)
ROW DEDICATION =	134 SQ. FT.
NET SITE AREA =	57,634 SQ. FT. (1.32 ACRES)
REQUIRED DENSITY =	15 D.U. MIN., 23 D.U. MAX.
PROPOSED DENSITY =	15 D.U.
MAXIMUM LOT COVERAGE =	45% (25,935 SQ. FT.)
PROPOSED LOT COVERAGE =	10% (5,917 SQ. FT.)
MINIMUM VEGETATED AREA =	15% (8,645 SQ. FT.)
PROPOSED VEGETATED AREA =	72% (41,231 SQ. FT.)



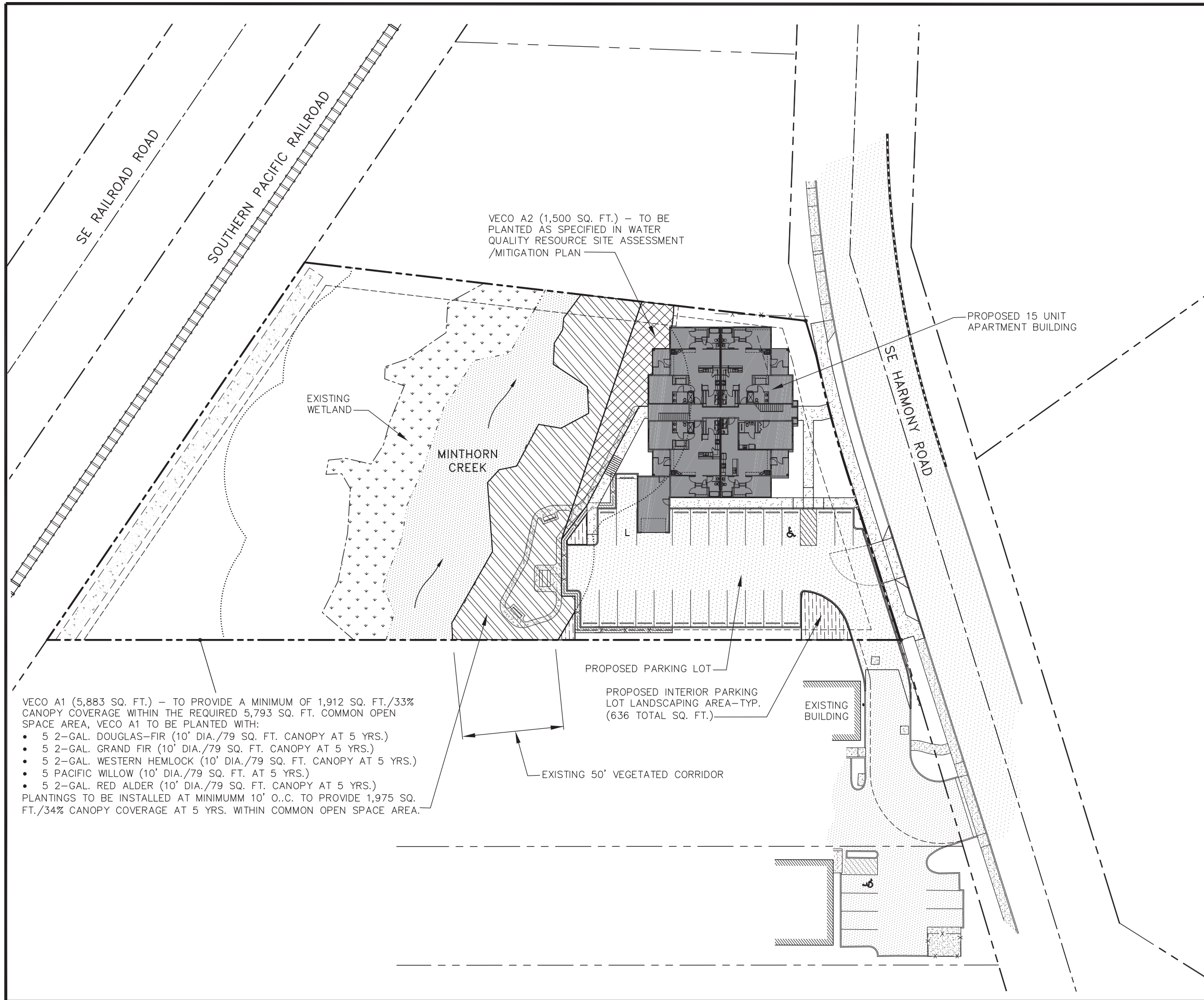
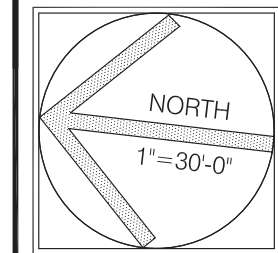
CITY OF MILWAUKIE LAND USE APPLICATION:
HARMONY PARK TOWNHOMES PH II

6115 SE HARMONY ROAD
 MILWAUKIE, OR 97222
 T.L. 2200 / T.M. 152E31D
 CLACKAMAS COUNTY, OREGON

WQR IMPACTS/
 TREE REMOVAL
 PLAN
 MAY 24, 2018

REVISIONS
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P-5



VECO A1 (5,883 SQ. FT.) – TO PROVIDE A MINIMUM OF 1,912 SQ. FT./33% CANOPY COVERAGE WITHIN THE REQUIRED 5,793 SQ. FT. COMMON OPEN SPACE AREA, VECO A1 TO BE PLANTED WITH:

- 5 2-GAL. DOUGLAS-FIR (10' DIA./79 SQ. FT. CANOPY AT 5 YRS.)
- 5 2-GAL. GRAND FIR (10' DIA./79 SQ. FT. CANOPY AT 5 YRS.)
- 5 2-GAL. WESTERN HEMLOCK (10' DIA./79 SQ. FT. CANOPY AT 5 YRS.)
- 5 PACIFIC WILLOW (10' DIA./79 SQ. FT. AT 5 YRS.)
- 5 2-GAL. RED ALDER (10' DIA./79 SQ. FT. CANOPY AT 5 YRS.)

PLANTINGS TO BE INSTALLED AT MINIMUM 10' O.C. TO PROVIDE 1,975 SQ. FT./34% CANOPY COVERAGE AT 5 YRS. WITHIN COMMON OPEN SPACE AREA.

VECO A2 (1,500 SQ. FT.) – TO BE PLANTED AS SPECIFIED IN WATER QUALITY RESOURCE SITE ASSESSMENT /MITIGATION PLAN

CITY OF MILWAUKIE LAND USE APPLICATION:
HARMONY PARK TOWNHOMES PH II
 6115 SE HARMONY ROAD
 MILWAUKIE, OR 97222

T.L. 2200 / T.M. 1S2E31D
 CLACKAMAS COUNTY, OREGON

INTERIOR PARKING/
 WQR PLANTING
 AREAS PLAN
 JUNE 14, 2018

REVISIONS

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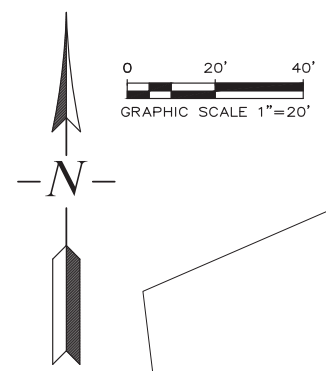
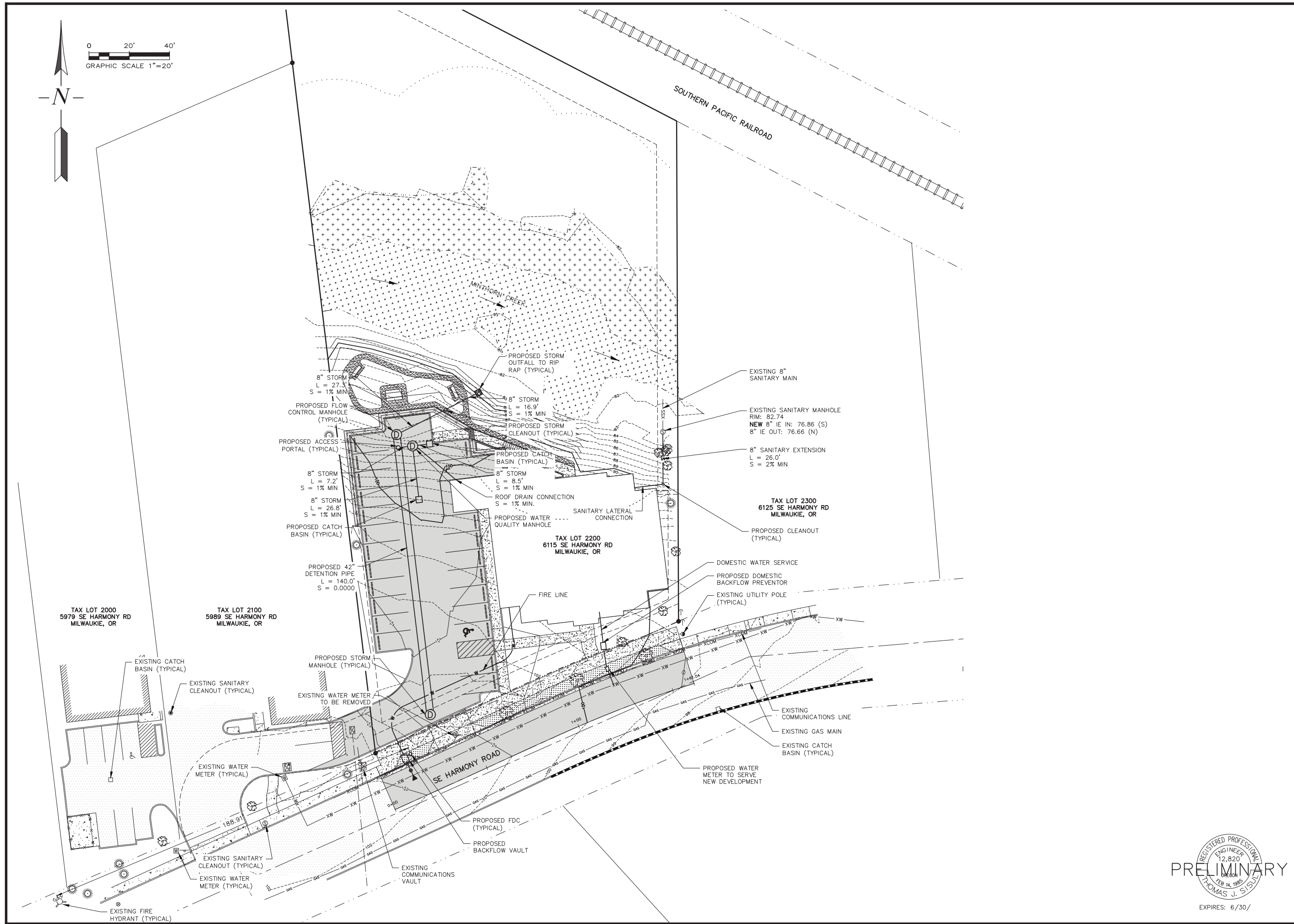
REVISIONS	BY
REVISED PER CITY OF MILWAUKIE COMMENTS (7-19-18)	JDM

**HARMONY PARK
TOWNHOMES PH II
HARMONY PARK APARTMENTS**

Preliminary Utility Plan

SISUL ENGINEERING
375 PORTLAND AVENUE
GLADSTONE, OREGON 97027
(503) 657-0188
DRAWING: z17-072 BASE.dwg

DATE	MARCH 2018
SCALE	AS SHOWN
DRAWN	JDM
JOB	SGL17-072
SHEET	2
OF 3	SHEETS



TAX LOT 2000
5979 SE HARMONY RD
MILWAUKIE, OR

TAX LOT 2100
5989 SE HARMONY RD
MILWAUKIE, OR

TAX LOT 2200
6115 SE HARMONY RD
MILWAUKIE, OR

TAX LOT 2300
6125 SE HARMONY RD
MILWAUKIE, OR

EXPIRES: 6/30/

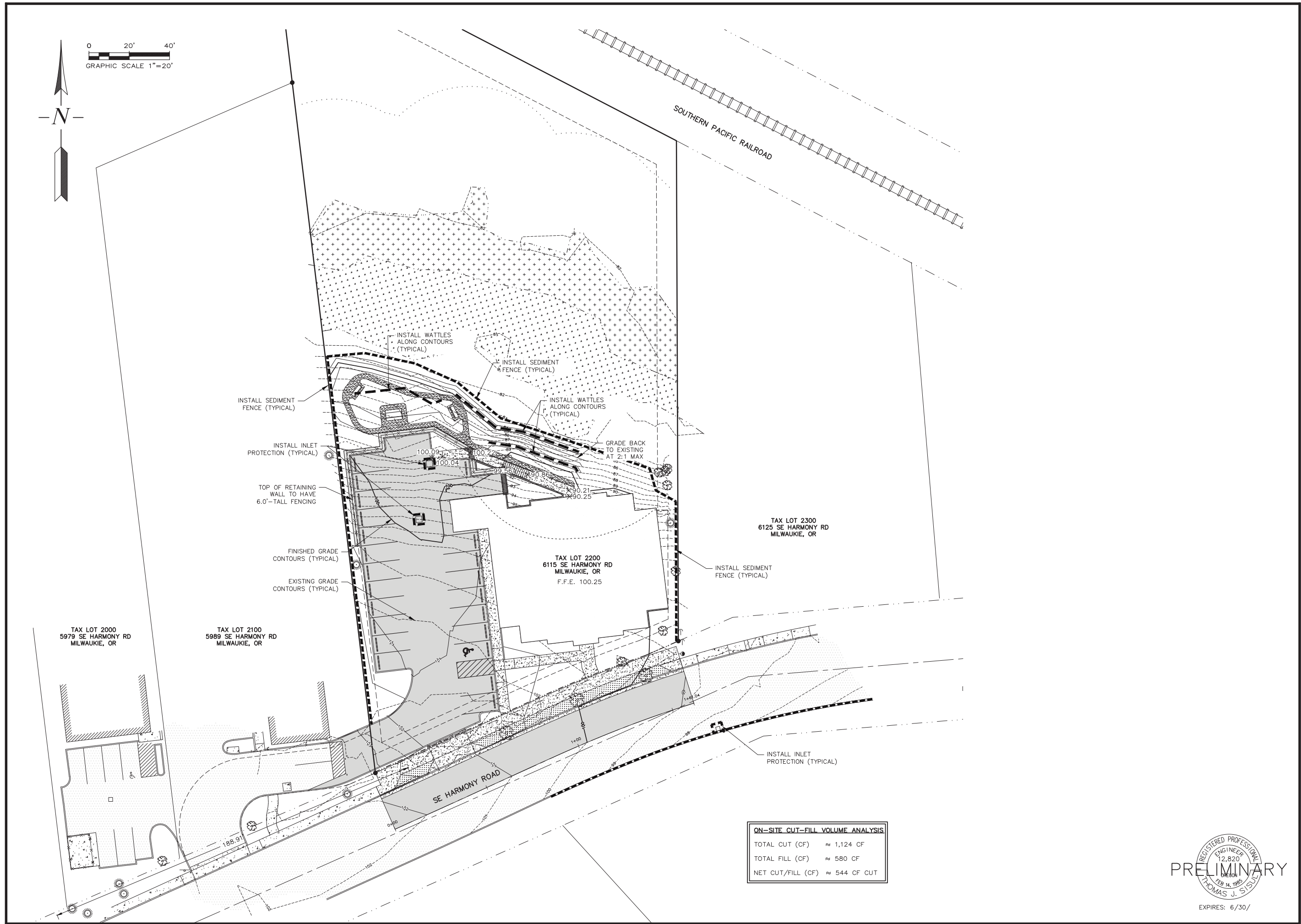
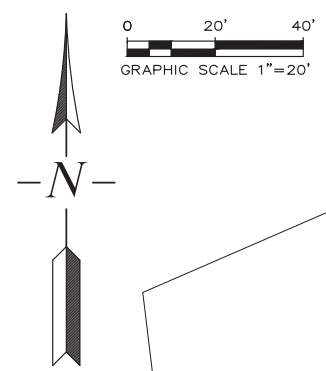
REVISIONS	BY
REVISED PER CITY OF MILWAUKIE COMMENTS (7-19-18)	JDM

**HARMONY PARK
TOWNHOMES PH II
HARMONY PARK APARTMENTS**

Preliminary Grading and ESC Plan

SISUL ENGINEERING
375 PORTLAND AVENUE
GLADSTONE, OREGON 97027
(503) 657-0188
DRAWING: 217-072 BASE.dwg

DATE	MARCH 2018
SCALE	AS SHOWN
DRAWN	JDM
JOB	SGL17-072
SHEET	3
OF 3	SHEETS

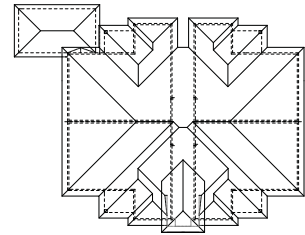


ON-SITE CUT-FILL VOLUME ANALYSIS	
TOTAL CUT (CF)	≈ 1,124 CF
TOTAL FILL (CF)	≈ 580 CF
NET CUT/FILL (CF)	≈ 544 CF CUT



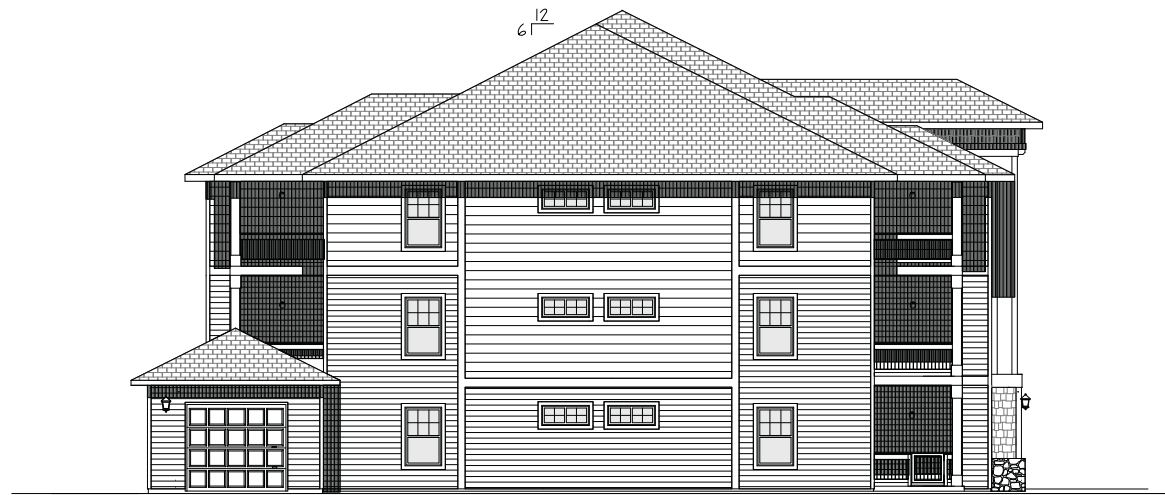
EXPIRES: 6/30/

REVISIONS	DATE
HEIGHT LIMIT ENCROACHMENT	6-5-18



FRONT ELEVATION

SCALE 1/8" = 1'-0"



LEFT ELEVATION

SCALE 1/8" = 1'-0"



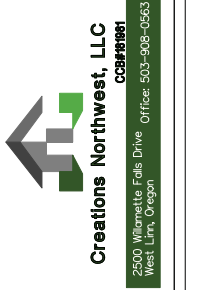
RIGHT ELEVATION

SCALE 1/8" = 1'-0"



BACK ELEVATION

SCALE 1/8" = 1'-0"

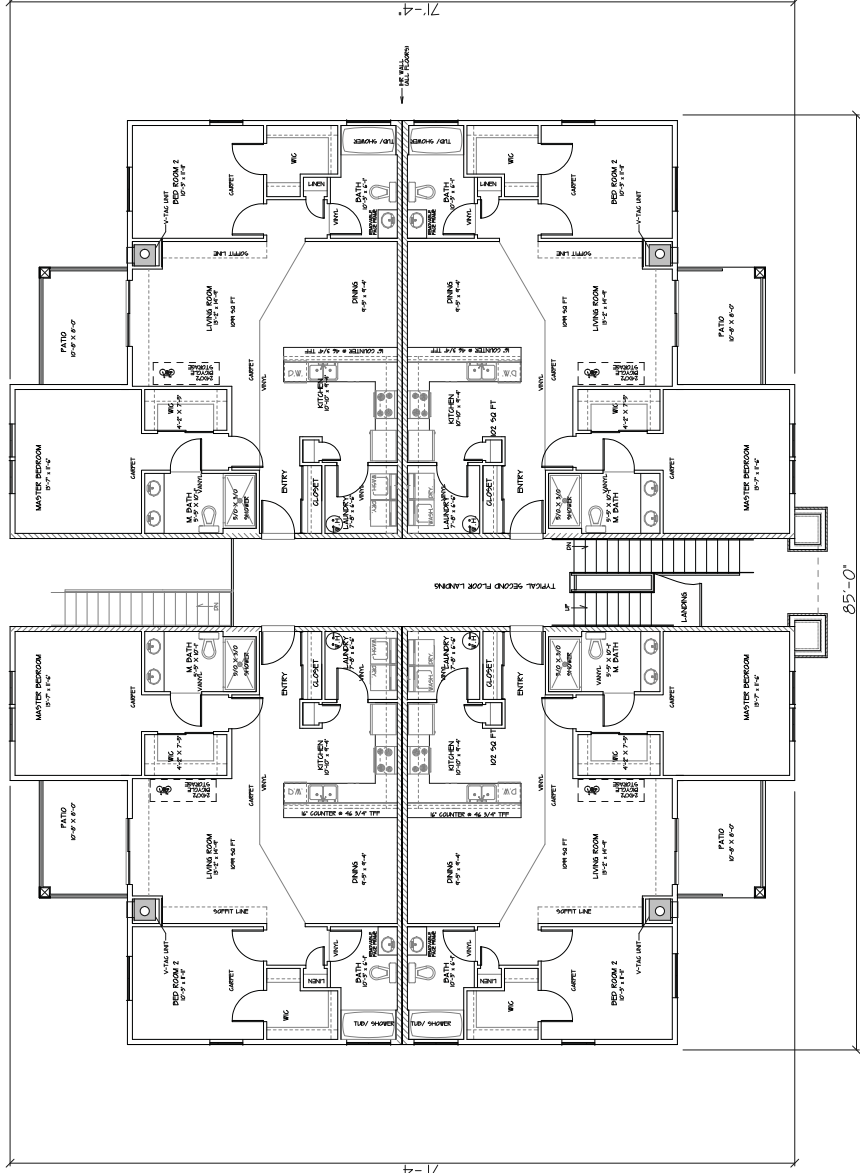


Creations Northwest, LLC
 2500 Wilamette Falls Drive
 West Linn, Oregon
 Office: 503-368-0563

APARTMENT BUILDING
ELEVATIONS

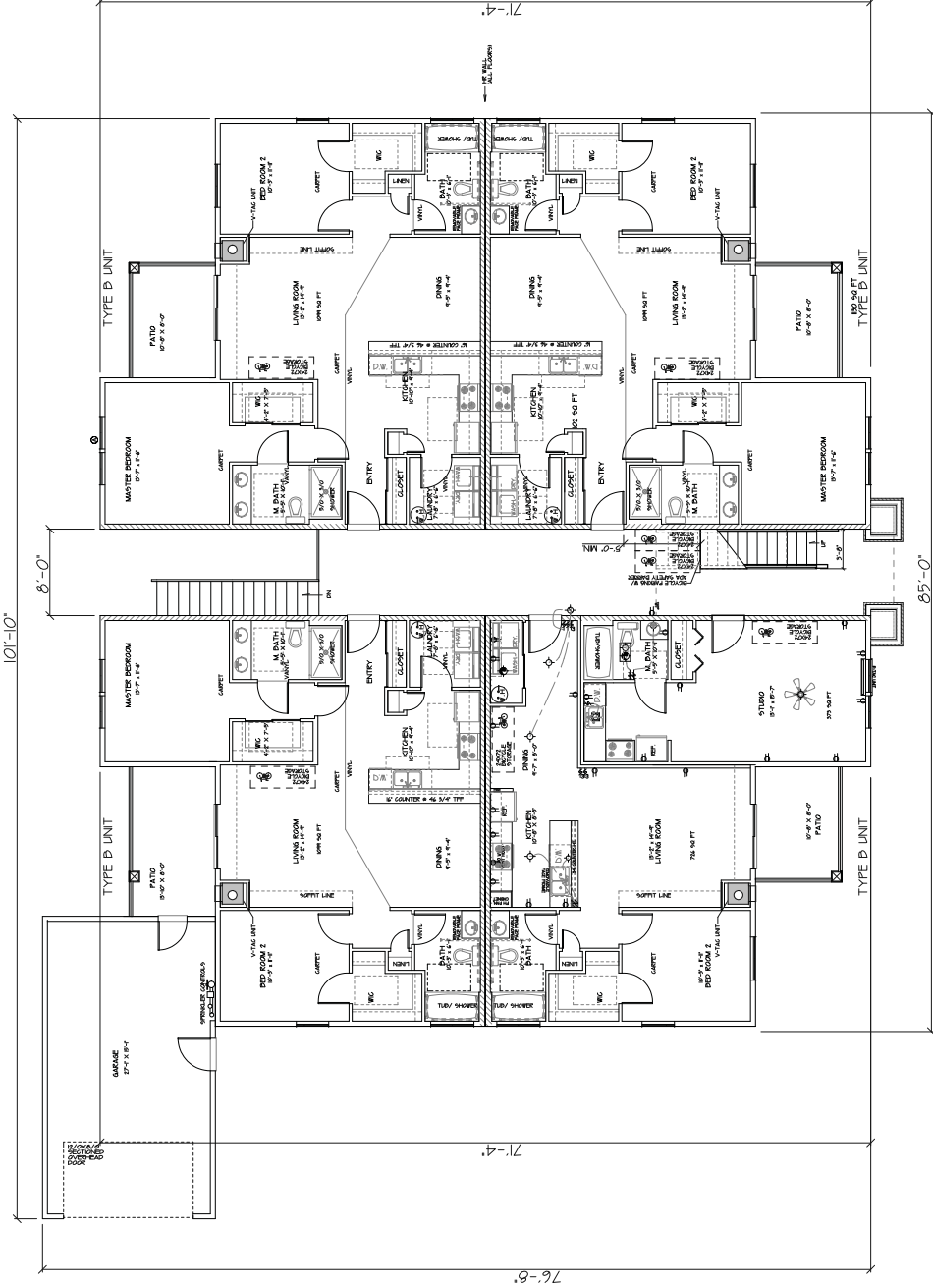
CADD NAME: HA A-1r
 DATE: 10-4-17
 SCALE: AS SHOWN
 DRAWN BY: R L H
 PROJECT #:

SHEET No.
A-1r
 of



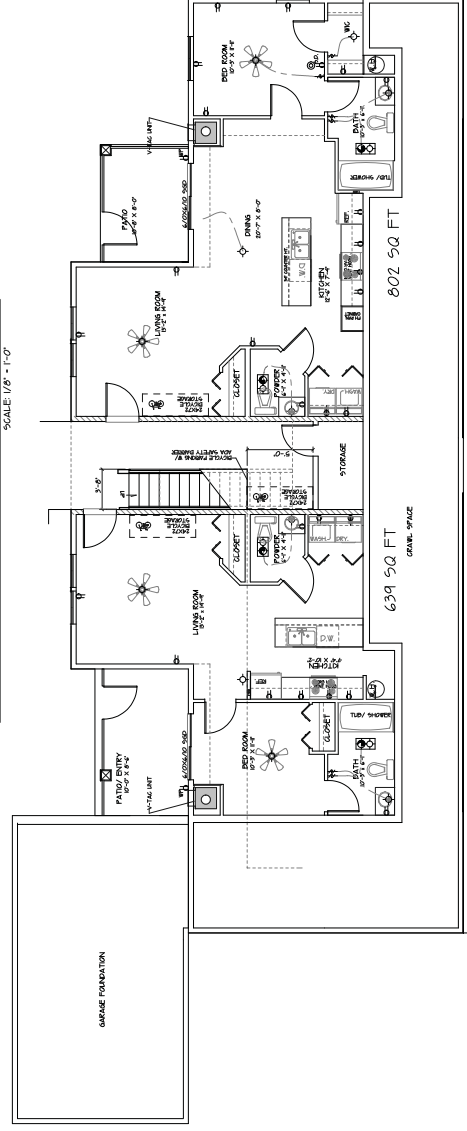
2ND & 3RD FLOOR PLAN

SCALE 1/8" = 1'-0"



1ST FLOOR PLAN

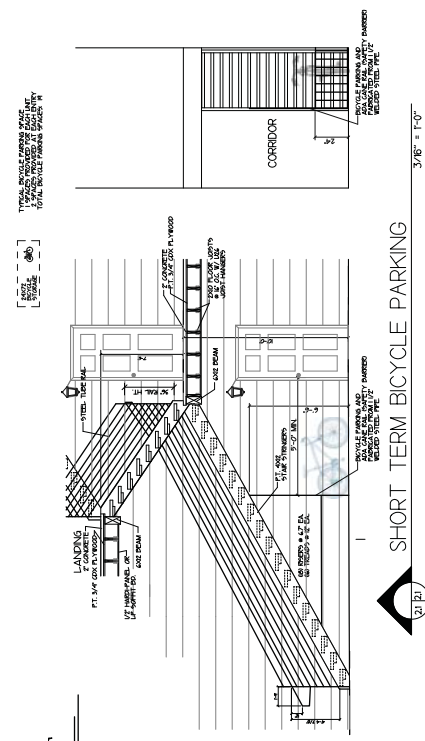
SCALE 1/8" = 1'-0"



DAYLIGHT BASEMENT

SCALE 1/8" = 1'-0"

AREA PER FLOOR : 4520 SQ FT
 (1) 1099 SQ FT 2 BED ROOM UNIT
 (1) 725 SQ FT 1 BED ROOM UNIT (MAIN FLOOR)
 (1) 375 SQ FT STUDIO APARTMENT (MAIN FLOOR)
 (1) 639 SQ FT 1 BED ROOM UNIT (BASEMENT)
 (1) 802 SQ FT 1 BEDROOM UNIT (BASEMENT)
 15 UNITS



SHORT TERM BICYCLE PARKING

APARTMENT BUILDING

FLOOR PLANS

Harmony Park Townhomes Phase II
 615 SE Harmony Road
 Milwaukie, OR 97222

Creations Northwest, LLC
 2500 Wilamette Falls Drive
 West Linn, Oregon
 Office: 503-968-0563

CADD NAME: HA A-2
 DATE: 4-17-18
 SCALE: AS SHOWN
 DRAWN BY: R L H
 PROJECT #:

SHEET No. A-2
 of

REVISIONS	DATE

C:\Users\rlh\Desktop\181718\181718\181718.dwg - 04/18/2018 - 11:52 AM - Scale: 1/8"

PRELIMINARY STORMWATER REPORT

SISUL ENGINEERING

A Division of Sisul Enterprises, Inc.

375 PORTLAND AVENUE, GLADSTONE, OREGON 97027

(503) 657-0188

FAX (503) 657-5779

July 25, 2018

Cascadia Planning + Development Services
PO Box 1920
Silverton, OR 97381

ATTN: Steve Kay

RE: Harmony Park Townhomes

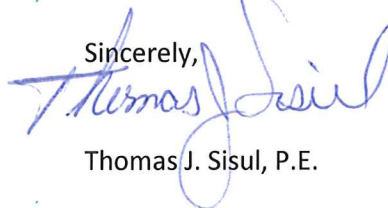
Dear Steve:

With regards to the City of Milwaukie's desire to have some form of infiltration on this site in accordance with Portland's Stormwater manual, we wish to note the following:

- A Water Quality Planter, per Portland's design standards would require a facility of approximately 1,000 SF. Such a facility if placed, in the only available area for such, to the north of the parking area, would create a significant land disturbance in the buffer area of the stream as the planter area would have to be leveled, for a planter to be constructed.
- It may be possible for pervious pavement to be used in some portions of the parking facility, but we would want guidance from the geotechnical engineer about where any such pervious surfacing could be placed, without placing undue hydraulic pressure the retaining wall that will be needed at the north end of the parking area.

As there is not a geotechnical engineer yet involved with the project, but one will be needed for permit drawings, we would ask that City defer the specifics of infiltration system until preparation of the permit drawings. We would be okay with a Condition of Approval that required infiltration of on-site stormwater to the extent feasible per geotechnical engineer recommendations.

Sincerely,



Thomas J. Sisul, P.E.

Harmony Park Apartments

Milwaukie, OR

Developer: Harmony Park Apartments, LLC

J.O. SGL 17-072

March 9th, 2018

PRELIMINARY STORM DRAIN DETENTION CALCULATIONS



EXPIRES: 6/30/

SISUL ENGINEERING

A Division of Sisul Enterprises, Inc.

375 Portland Avenue

Gladstone, OR 97027

PHONE: (503) 657-0188

FAX: (503) 657-5779

Narrative:

The site is currently undeveloped where the majority of the site is covered with vegetation and trees. Minthorn Creek passes through the middle of the site. The property generally falls from the southwest to the northeast. The slopes vary between 5% and in excess of 50%. The steep slope areas occur near Minthorn Creek. The site is located due north of Harmony Road at 6115 SE Harmony Road in Milwaukie and is zoned R-2 with a Natural Resource Overlay.

The site is proposed to be developed with a 14-unit multi-family apartment as well as associated parking. The building footprint will be approximately 5,918 SF with parking lot and sidewalks approximately 9,727 SF. According to the City of Milwaukie pre-application comments (dated 11/2/17), the runoff from the proposed development is allowed to outfall to Minthorn Creek since there is no Milwaukie storm system to connect to in Harmony Road. Section 2 of the Stormwater Design Standards of the City of Milwaukie Public Works Standards will be followed for design of the stormwater management system. Detention and water quality are required. The City of Milwaukie requirements for detention are as follows.

Detention Requirements:

Developed 2-yr, 24-hour storm event must be released to the pre-developed runoff rate of a 2-yr 24-hour storm event.

Developed 5-yr, 24-hour storm event must be released to the pre-developed runoff rate of a 5-yr 24-hour storm event.

Developed 10-yr, 24-hour storm event must be released to the pre-developed runoff rate of a 10-yr 24-hour storm event.

Developed 25-yr, 24-hour storm event must be released to the pre-developed runoff rate of a 25-yr 24-hour storm event.

Site-Specific Stormwater Management Design Note:

According to Section 2.0044 of the Stormwater Design Standards of the City of Milwaukie Public Works Standards:

Detention volume storage methods, in order of preference, are the following:

- 1.) Surface storage—pond*
- 2.) Underground storage by tank or vault will be approved by the City Engineer only when a pond is impracticable.*

Due to the existing topography of the site and the elevation constraints that must be matched (i.e. existing sidewalks, contours along property lines, etc.), the detention requirements cannot be met via pond or planters. With the site layout and these constraints, there are no adequately sized areas to meet the

requirements, therefore, the requirements will be met via detention pipe under the parking lot.

Site Conditions & Design Values - Pre-Development:

Area:

Total Area = 1.33 acres
Pervious Area = 1.33 acres
Impervious Area = 0.00 acres

Existing Use: The site is currently undeveloped where the majority of the site is covered with vegetation and trees.

Soil Type: This site has three (3) soil types as identified by NRCS Web Soil Survey (See Soil Survey Attachments):

Salem silt loam 76B -- Hydrologic Group 'B'
Wapato silty clay 84 – Hydrologic Groups 'C/D'
Woodburn silt loam 91B – Hydrologic Group 'C'

Runoff Curve Numbers:

Open space, good condition - Hydrologic Group 'D' => 80
Paved parking lots, roofs, driveways, etc. - Hydrologic Group 'D' => 98

Rainfall Distribution: (per Oregon Isopluvial Maps)

2-yr, 24-hour duration STD SCS Type 1A Storm => 2.4 inches
5-yr, 24-hour duration STD SCS Type 1A Storm => 2.9 inches
10-yr, 24-hour duration STD SCS Type 1A Storm => 3.4 inches
25-yr, 24-hour duration STD SCS Type 1A Storm => 3.9 inches

Time of Concentration – Pre-Developed: (Design Values per Table 5-4. Normal Range Hydraulic Roughness Coefficient (Manning's n) for Channels, City of Oregon City Stormwater and Grading Design Standards)

$$\text{Sheet Flow: } T_{C1} = \frac{0.42 (n_s L)^{0.8}}{(P_2)^{0.5} * (s_o)^{0.4}}$$

L = 150 ft.
P₂ = 2.4 in.
S_o = 0.025 ft./ft.
n_s = 0.15

$$T_{C1} = \frac{0.42 (0.15 * 150)^{0.8}}{(2.4)^{0.5} * (0.025)^{0.4}} \rightarrow T_{C1} = 14.31 \text{ minutes}$$

Shallow Concentrated Flow:

$$T_{C2} = \frac{L}{(60) * k * (s_o)^{0.4}}$$

$$L = 119 \text{ ft.}$$

$$k = 11$$

$$S_o = 0.168 \text{ ft./ft.}$$

$$T_{C2} = \frac{(119)}{(60) * (11) * (0.168)^{0.5}} \rightarrow T_{C2} = 0.44 \text{ minutes}$$

$$T_C = T_{C1} + T_{C2} \rightarrow \boxed{T_C = 14.75 \text{ minutes}}$$

Pre-Development Hydrographs:

The pre-developed hydrographs will be generated using the Santa Barbara Urban Hydrograph (SBUH) Method. (KING COUNTY DEPARTMENT OF PUBLIC WORKS Surface Water Management Division, HYDROGRAPH PROGRAMS Version 4.20)

2-year Runoff Rate – Pre-Development

***** S.C.S. TYPE-1A DISTRIBUTION *****
***** 2-YEAR 24-HOUR STORM ***** 2.40" TOTAL PRECIP. *****

ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO. 1
1.3264, 80, 0.0000, 98, 14.75

DATA PRINT-OUT:

AREA (ACRES)	PERVIOUS		IMPERVIOUS		TC (MINUTES)
	A	CN	A	CN	
1.3	1.3	80.0	.0	98.0	14.8

PEAK-Q (CFS)	T-PEAK (HRS)	VOL (CU-FT)
<u>.19</u>	7.83	3944

ENTER [d:][path]filename[.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:
17072-2.und

5-year Runoff Rate – Pre-Development

***** S.C.S. TYPE-1A DISTRIBUTION *****
***** 5-YEAR 24-HOUR STORM ***** 2.90" TOTAL PRECIP. *****

ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO. 1
1.3264, 80, 0.0000, 98, 14.75

DATA PRINT-OUT:

AREA (ACRES)	PERVIOUS	IMPERVIOUS	TC (MINUTES)
	A CN	A CN	
1.3	1.3 80.0	.0 98.0	14.8
PEAK-Q (CFS)	T-PEAK (HRS)	VOL (CU-FT)	
<u>.30</u>	7.83	5645	

ENTER [d:][path]filename[.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:
17072-5.und

10-year Runoff Rate – Pre-Development

 ***** S.C.S. TYPE-1A DISTRIBUTION *****
 ***** 10-YEAR 24-HOUR STORM ***** 3.40" TOTAL PRECIP. *****

ENTER: A (PERV), CN (PERV), A (IMPERV), CN (IMPERV), TC FOR BASIN NO. 1
1.3264, 80, 0.0000, 98, 14.75

DATA PRINT-OUT:

AREA (ACRES)	PERVIOUS	IMPERVIOUS	TC (MINUTES)
	A CN	A CN	
1.3	1.3 80.0	.0 98.0	14.8
PEAK-Q (CFS)	T-PEAK (HRS)	VOL (CU-FT)	
<u>.43</u>	7.83	7480	

ENTER [d:][path]filename[.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:
17072-10.und

25-year Runoff Rate – Pre-Development

 ***** S.C.S. TYPE-1A DISTRIBUTION *****
 ***** 25-YEAR 24-HOUR STORM ***** 3.90" TOTAL PRECIP. *****

ENTER: A (PERV), CN (PERV), A (IMPERV), CN (IMPERV), TC FOR BASIN NO. 1
1.3264, 80, 0.0000, 98, 14.75

DATA PRINT-OUT:

AREA (ACRES)	PERVIOUS	IMPERVIOUS	TC (MINUTES)
	A CN	A CN	
1.3	1.3 80.0	.0 98.0	14.8
PEAK-Q (CFS)	T-PEAK (HRS)	VOL (CU-FT)	
<u>.56</u>	7.83	9411	

ENTER [d:][path]filename[.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:
17072-25.und

Site Conditions & Design Values - Post-Development:

Area: These calculations are for the area of the proposed development that will drain into the detention pipe.

Total Area = 1.33 acres
 Pervious Area = 0.9446 acres
 Impervious Area = 0.3592 acres

Runoff Curve Numbers:

Open space, good condition - Hydrologic Group 'D' => 80
 Paved parking lots, roofs, driveways, etc. - Hydrologic Group 'D' => 98

Rainfall Distribution: (per Oregon Isopluvial Maps)

2-yr, 24-hour duration STD SCS Type 1A Storm => 2.4 inches
 5-yr, 24-hour duration STD SCS Type 1A Storm => 2.9 inches
 10-yr, 24-hour duration STD SCS Type 1A Storm => 3.4 inches
 25-yr, 24-hour duration STD SCS Type 1A Storm => 3.9 inches

Time of Concentration – Post-Development:

Since a large portion of the site is impervious, the minimum time of concentration of **5 minutes** will be used.

T_c = 5 minutes

Post-Developed Hydrographs:

The post developed hydrographs will be generated using the Santa Barbara Urban Hydrograph (SBUH) Method. (KING COUNTY DEPARTMENT OF PUBLIC WORKS Surface Water Management Division, HYDROGRAPH PROGRAMS Version 4.20)

2-year Runoff Rate – Post Development

 ***** S.C.S. TYPE-1A DISTRIBUTION *****
 ***** 2-YEAR 24-HOUR STORM ***** 2.40" TOTAL PRECIP. *****

ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO. 1
 0.9446,80,0.3592,98,5

DATA PRINT-OUT:

AREA (ACRES)	PERVIOUS		IMPERVIOUS		TC (MINUTES)
	A	CN	A	CN	
1.3	.9	80.0	.4	98.0	5.0
PEAK-Q (CFS)	T-PEAK (HRS)		VOL (CU-FT)		
<u>.37</u>	7.67		5644		

ENTER [d:][path]filename[.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:
 17072-2.dev

5-year Runoff Rate – Post-Development

***** S.C.S. TYPE-1A DISTRIBUTION *****
***** 5-YEAR 24-HOUR STORM ***** 2.90" TOTAL PRECIP. *****

ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO. 1
0.9446, 80, 0.3592, 98, 5

DATA PRINT-OUT:

AREA (ACRES)	PERVIOUS		IMPERVIOUS		TC (MINUTES)
	A	CN	A	CN	
1.3	.9	80.0	.4	98.0	5.0
PEAK-Q (CFS)	T-PEAK (HRS)		VOL (CU-FT)		
<u>.52</u>	7.67		7510		

ENTER [d:][path]filename[.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:
17072-5.dev

10-year Runoff Rate – Post-Development

***** S.C.S. TYPE-1A DISTRIBUTION *****
***** 10-YEAR 24-HOUR STORM ***** 3.40" TOTAL PRECIP. *****

ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO. 1
0.9446, 80, 0.3592, 98, 5

DATA PRINT-OUT:

AREA (ACRES)	PERVIOUS		IMPERVIOUS		TC (MINUTES)
	A	CN	A	CN	
1.3	.9	80.0	.4	98.0	5.0
PEAK-Q (CFS)	T-PEAK (HRS)		VOL (CU-FT)		
<u>.67</u>	7.67		9469		

ENTER [d:][path]filename[.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:
17072-10.dev

25-year Runoff Rate – Post-Development

***** S.C.S. TYPE-1A DISTRIBUTION *****
***** 25-YEAR 24-HOUR STORM ***** 3.90" TOTAL PRECIP. *****

ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO. 1
0.9446, 80, 0.3592, 98, 5

DATA PRINT-OUT:

AREA (ACRES)	PERVIOUS		IMPERVIOUS		TC (MINUTES)
	A	CN	A	CN	
1.3	.9	80.0	.4	98.0	5.0
PEAK-Q (CFS)	T-PEAK (HRS)		VOL (CU-FT)		
<u>.83</u>	7.67		11497		

ENTER [d:][path]filename[.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:
17072-25.dev

Detention Pipe Routing:

The detention pipe will be 42" in diameter and 140 feet in length. The flow control structure for the detention pipe will have two orifices and an overflow riser. The attached spreadsheet shows the detention area routing data.

The routing will be performed using the Santa Barbara Urban Hydrograph (SBUH) Method. (KING COUNTY DEPARTMENT OF PUBLIC WORKS Surface Water Management Division, HYDROGRAPH PROGRAMS Version 4.20)

RESERVOIR ROUTING INFLOW/OUTFLOW ROUTINE

SPECIFY [d:][path]filename[.ext] OF ROUTING DATA
17072.txt

DISPLAY ROUTING DATA (Y or N)?

Y

ROUTING DATA:

STAGE (FT)	DISCHARGE (CFS)	STORAGE (CU-FT)	PERM-AREA (SQ-FT)
.00	.00	.0	.0
.25	.08	45.8	.0
.50	.12	124.3	.0
.75	.15	221.1	.0
1.00	.17	330.1	.0
1.25	.21	449.4	.0
1.50	.27	570.6	.0
1.75	.30	696.2	.0
2.00	.34	821.5	.0
2.25	.37	944.3	.0
2.50	.39	1061.8	.0
2.75	.42	1170.9	.0
3.00	.44	1267.7	.0
3.25	1.51	1346.3	.0
3.50	3.46	1390.9	.0

AVERAGE PERM-RATE: .0 MINUTES/INCH

2-year Detention Routing:

ENTER [d:][path]filename[.ext] OF COMPUTED HYDROGRAPH:
17072-2.dev

INFLOW/OUTFLOW ANALYSIS:

PEAK-INFLOW (CFS)	PEAK-OUTFLOW (CFS)	OUTFLOW-VOL (CU-FT)
.37	<u>.19</u>	5706
INITIAL-STAGE (FT)	TIME-OF-PEAK (HRS)	PEAK-STAGE-ELEV (FT)
.00	8.00	<u>1.15</u>
PEAK STORAGE:	390 CU-FT	

ENTER [d:][path]filename[.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:
17072-2.pip

5-year Detention Routing:

ENTER [d:][path]filename[.ext] OF COMPUTED HYDROGRAPH:
17072-5.dev

INFLOW/OUTFLOW ANALYSIS:

PEAK-INFLOW (CFS)	PEAK-OUTFLOW (CFS)	OUTFLOW-VOL (CU-FT)
.52	<u>.28</u>	7505
INITIAL-STAGE (FT)	TIME-OF-PEAK (HRS)	PEAK-STAGE-ELEV (FT)
.00	8.00	<u>1.57</u>
PEAK STORAGE:	600 CU-FT	

ENTER [d:][path]filename[.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:
17072-5.pip

10-year Detention Routing:

ENTER [d:][path]filename[.ext] OF COMPUTED HYDROGRAPH:
17072-10.dev

INFLOW/OUTFLOW ANALYSIS:

PEAK-INFLOW (CFS)	PEAK-OUTFLOW (CFS)	OUTFLOW-VOL (CU-FT)
.67	<u>.35</u>	9545
INITIAL-STAGE (FT)	TIME-OF-PEAK (HRS)	PEAK-STAGE-ELEV (FT)
.00	8.00	<u>2.05</u>
PEAK STORAGE:	840 CU-FT	

ENTER [d:][path]filename[.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:
17072-10.pip

25-year Detention Routing:

ENTER [d:][path]filename[.ext] OF COMPUTED HYDROGRAPH:
17072-25.dev

INFLOW/OUTFLOW ANALYSIS:

PEAK-INFLOW (CFS)	PEAK-OUTFLOW (CFS)	OUTFLOW-VOL (CU-FT)
.83	<u>.40</u>	11490
INITIAL-STAGE (FT)	TIME-OF-PEAK (HRS)	PEAK-STAGE-ELEV (FT)
.00	8.00	<u>2.62</u>
PEAK STORAGE:	1110 CU-FT	

ENTER [d:][path]filename[.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:
17072-25.pip

Detention Summary:

The detention requirements are to as follows:

Developed 2-yr, 24-hour storm event must be released to the pre-developed runoff rate of a 2-yr 24-hour storm event.

Developed 5-yr, 24-hour storm event must be released to the pre-developed runoff rate of a 5-yr 24-hour storm event.

Developed 10-yr, 24-hour storm event must be released to the pre-developed runoff rate of a 10-yr 24-hour storm event.

Developed 25-yr, 24-hour storm event must be released to the pre-developed runoff rate of a 25-yr 24-hour storm event.

The detention pipe will be 42" in diameter and 140 feet in length. The flow control structure will have two orifices and an overflow riser. The bottom orifice will be 2-1/2 inches in diameter at an elevation of 0.00 feet above the bottom of the pipe, and the top orifice will be 2 inches in diameter at an elevation of 1.15 feet above the bottom of the pipe. The 12-inch overflow riser will be at an elevation of 3.00 feet above the bottom of the pipe.

The following tables show that the detention requirements have been met.

Minimum Peak Rate Stormwater Runoff Control Requirements.

Developed 2-yr, 24-hour storm event must be released to the pre-developed runoff rate of a 2-yr 24-hour storm event.

2-year allowable release rate	2-year post-development release rate
0.19 cfs	0.19 cfs

Developed 5-yr, 24-hour storm event must be released to the pre-developed runoff rate of a 5-yr 24-hour storm event.

5-year allowable release rate	5-year post-development release rate
0.30 cfs	0.28 cfs

Developed 10-yr, 24-hour storm event must be released to the pre-developed runoff rate of a 10-yr 24-hour storm event.

10-year allowable release rate	10-year post-development release rate
0.43 cfs	0.35 cfs

Developed 25-yr, 24-hour storm event must be released to the pre-developed runoff rate of a 25-yr 24-hour storm event.

25-year allowable release rate	25-year post-development release rate
0.56 cfs	0.40 cfs

Detention Pipe Routing Data
Harmony Park Apartments
 J.O. SQL T-072

Stage Elevation (ft)	Downstream Average Area (sq.ft.)	Upstream Average Area (sq.ft.)	Pipe Storage (cu.ft.)	Manhole Storage (cu.ft.)	Total Storage (cu.ft.)	Elevation (ft)	Orifice 1 Discharge (cfs)	Orifice 2 Discharge (cfs)	Overflow Discharge (cfs)	Actual Discharge (cfs)									
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000									
0.25	0.31	0.31	42.70	3.14	45.84	0.25	0.085	0.000	0.000	0.085									
0.50	0.84	0.84	180.03	6.28	186.31	0.50	0.120	0.000	0.000	0.120									
0.75	1.51	1.51	211.64	9.42	221.06	0.75	0.147	0.000	0.000	0.147									
1.00	2.27	2.27	317.56	12.56	330.12	1.00	0.170	0.000	0.000	0.170									
1.25	3.08	3.08	433.66	15.70	449.36	1.25	0.190	0.034	0.000	0.224									
1.50	3.94	3.94	551.80	18.84	570.64	1.50	0.208	0.064	0.000	0.272									
1.75	4.81	4.81	674.27	21.98	696.25	1.75	0.224	0.084	0.000	0.308									
2.00	5.68	5.68	796.42	25.12	821.54	2.00	0.240	0.100	0.000	0.340									
2.25	6.54	6.54	915.99	28.26	944.25	2.25	0.254	0.114	0.000	0.368									
2.50	7.35	7.35	1030.39	31.40	1061.79	2.50	0.268	0.126	0.000	0.394									
2.75	8.11	8.11	1156.35	34.54	1170.89	2.75	0.281	0.137	0.000	0.419									
3.00	8.78	8.78	1230.07	37.68	1267.75	3.00	0.294	0.148	0.000	0.441									
3.25	9.32	9.32	1305.47	40.82	1346.29	3.25	0.306	0.157	1.052	1.516									
3.50	9.62	9.62	1346.95	43.96	1390.91	3.50	0.317	0.166	2.977	3.461									

* If pipe is given a slope of greater than 0.0002, then change equation to account for upstream and downstream areas.

- A** Head
- B** Water Surface Elevation
- C** Downstream Water Surface Area @ Given Elevation
- D** Upstream Water Surface Area @ Given Elevation
- E** Pipe Storage Volume = (Average Area) x (d Elevation) + Previous Volume
- F** Manhole Storage Volume = (Head) * ((3.14 x (Manhole Radius)²) x (Stage Interval))
- G** Total Storage = Pipe Storage Volume + Manhole Storage Volume

- ORIFICE** $Q = 0.62 \times (A \times C) \times (2 \times g \times H)^{0.5}$
- I** $Q = \text{Orifice Equation}$
- J** $Q = \text{Orifice Equation}$
- K** Overflow River as a Weir: $Q = 2.66 \times L \times H^{1.5}$
- L** Actual Discharge = **I + J + K** $L = 2 \times \pi \times r^2$

42" Pipe Cross-Section Stage Areas:

9.6211	3.50
9.3248	3.25
8.7862	3.00
8.1168	2.75
7.3599	2.50
6.5428	2.25
5.6887	2.00
4.8162	1.75
3.9414	1.50
3.0976	1.25
2.2683	1.00
1.5117	0.75
0.8431	0.50
0.3050	0.25

Emergency Overflow:

The 100-year, 24-hour storm was routed through the detention pipe to verify that it can overflow safely. The routing data is shown below:

100-year Runoff Rate – Post-Development

***** S.C.S. TYPE-1A DISTRIBUTION *****
***** 100-YEAR 24-HOUR STORM ***** 5.00" TOTAL PRECIP. *****

ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO. 1
0.9446, 80, 0.3592, 98, 5

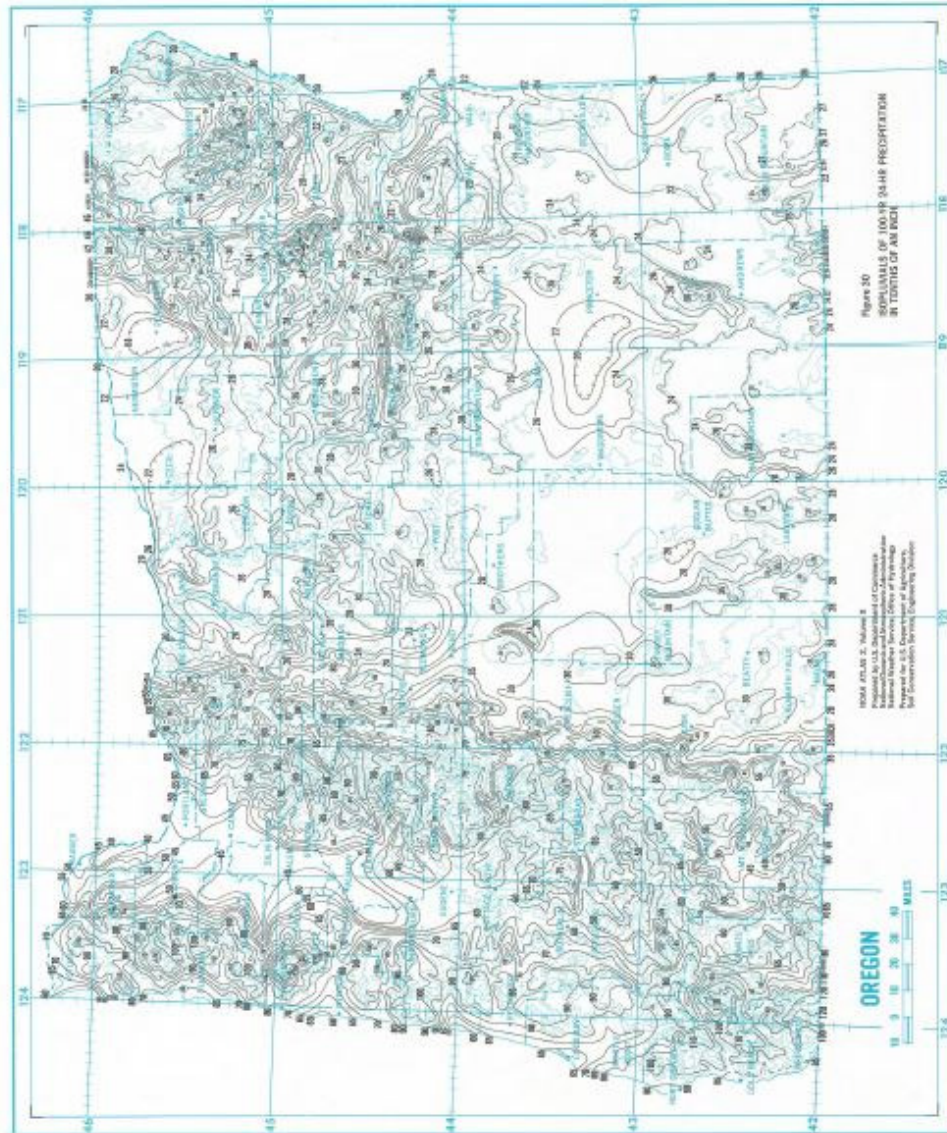
DATA PRINT-OUT:

AREA (ACRES)	PERVIOUS		IMPERVIOUS		TC (MINUTES)
	A	CN	A	CN	
1.3	.9	80.0	.4	98.0	5.0

PEAK-Q (CFS)	T-PEAK (HRS)	VOL (CU-FT)
<u>1.20</u>	7.67	16129

ENTER [d:][path]filename[.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:
17072-100.dev

* NOTE: The 5.00" of precipitation was obtained from the 100-year, 24-hour isopluvial map of Oregon (See following page).



100-Year Detention Routing:

ENTER [d:][path]filename[.ext] OF COMPUTED HYDROGRAPH:
17072-100.dev
INFLOW/OUTFLOW ANALYSIS:

PEAK-INFLOW (CFS)	PEAK-OUTFLOW (CFS)	OUTFLOW-VOL (CU-FT)
1.20	<u>1.20</u>	16062
INITIAL-STAGE (FT)	TIME-OF-PEAK (HRS)	PEAK-STAGE-ELEV (FT)
.00	7.83	<u>3.19</u>
PEAK STORAGE:	1320 CU-FT	

ENTER [d:][path]filename[.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:
17072-100.pip

Summary:

The peak stage elevation from the routed 100-year, 24-hour storm is 3.19 feet above the bottom of the pipe which is approximately 0.19' above the top of the overflow riser. Therefore, there is still 0.31 feet of freeboard within the 42" detention pipe. Thus, the structure can adequately convey the 100-year storm event.

For good measure, the full flow capacity of the outlet pipe from the flow control manhole was examined to ensure that it will be capable of conveying the flows from the 100-year, 24-hour storm. If the peak flow resulting from the routing of the 100-year storm is less than the full flow discharge, than the pipe size is adequate. It is assumed that the pipe will be an 8" diameter. FlowMaster was used to obtain these results.

Circular Channel: Manning's Equation			
Comment: 8" OUT FROM FLOW CONTROL MANHOLE			
Solve For.....Full Flow Capacity			
Diameter.....	0.67 ft	Velocity.....	4.91 fps
Slope.....	0.0200 ft/ft	Flow Area.....	0.35 sf
Manning's n....	0.013	Critical Slope	0.0176 ft/ft
Discharge.....	1.73 cfs	Critical Depth	0.60 ft
Depth.....	0.67 ft	Percent Full..	100.00 %
		Froude Number.	FULL
		Full Capacity.	1.73 cfs
		QMAX @.94D....	1.86 cfs

Since the full flow discharge at a 2% slope is determined to be 1.73 CFS and the peak discharge from the routed 100-year storm is 1.20 CFS, it is concluded that the pipe size is adequate to convey the runoff from the 100-year storm.

NOTE: Due to the terrain and proposed grading on site, the slope of this pipe is likely to be steeper, and therefore, would be even more capable of conveying the discharge (minimum slope of 8" pipe = 0.0096 or 0.96%).

Water Quality Calculations:

According to City of Milwaukie's pre-application comments (dated 11/2/17), the City has adopted the City of Portland 2016 Stormwater Management Manual for the design of water quality facilities. As previously mentioned, due to topography and grading constraints for the site, a typical water quality facility is not feasible. Therefore, according to the City of Portland 2016 Stormwater Management Manual:

"Manufactured stormwater treatment technologies may also be considered where site constraints limit or prevent facility sizing for the water quality storm (0.83 inches in 24 hours). In those instances, approved manufactured stormwater treatment technologies may be proposed for pollution reduction."

Water Quality Calculations:

The water quality requirement is to collect and treat 0.83 inches of runoff in 24 hours.

The water quality analysis will be performed using the Santa Barbara Urban Hydrograph (SBUH) Method. (KING COUNTY DEPARTMENT OF PUBLIC WORKS Surface Water Management Division, HYDROGRAPH PROGRAMS Version 4.20)

***** S.C.S. TYPE-1A DISTRIBUTION *****
***** 1-YEAR 24-HOUR STORM ***** .83" TOTAL PRECIP. *****

ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO. 1
0.9446, 80, 0.3592, 98, 5

DATA PRINT-OUT:

AREA (ACRES)	PERVIOUS		IMPERVIOUS		TC (MINUTES)
	A	CN	A	CN	
1.3	.9	80.0	.4	98.0	5.0
PEAK-Q (CFS)	T-PEAK (HRS)		VOL (CU-FT)		
<u>.06</u>	7.67		949		

ENTER [d:][path]filename[.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:
17072-1.wq

Water Quality Summary:

A Contech CDS2015-4-C water quality manhole will be sufficient enough to treat runoff from the proposed development. See the following detail for further information.

Erosion Prevention and Sediment Control:

During construction, sediment fence will be placed surrounding the perimeter of the site improvements to prevent any movement of soil or debris from on-site to neighboring properties. Sediment fence will remain on-site for the entire duration of construction. In the catch basins on-site, silt sack inserts will be used to catch sediment that is transferred by storm runoff. Bio bags will be used on the proposed curb inlet to the north as well as the next downstream catch basins from the site. Straw wattles will be placed along the contours on the steep slopes.

SUPPORTING PAGES

Engineering Properties

This table gives the engineering classifications and the range of engineering properties for the layers of each soil in the survey area.

Hydrologic soil group is a group of soils having similar runoff potential under similar storm and cover conditions. The criteria for determining Hydrologic soil group is found in the National Engineering Handbook, Chapter 7 issued May 2007 (<http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba>). Listing HSGs by soil map unit component and not by soil series is a new concept for the engineers. Past engineering references contained lists of HSGs by soil series. Soil series are continually being defined and redefined, and the list of soil series names changes so frequently as to make the task of maintaining a single national list virtually impossible. Therefore, the criteria is now used to calculate the HSG using the component soil properties and no such national series lists will be maintained. All such references are obsolete and their use should be discontinued. Soil properties that influence runoff potential are those that influence the minimum rate of infiltration for a bare soil after prolonged wetting and when not frozen. These properties are depth to a seasonal high water table, saturated hydraulic conductivity after prolonged wetting, and depth to a layer with a very slow water transmission rate. Changes in soil properties caused by land management or climate changes also cause the hydrologic soil group to change. The influence of ground cover is treated independently. There are four hydrologic soil groups, A, B, C, and D, and three dual groups, A/D, B/D, and C/D. In the dual groups, the first letter is for drained areas and the second letter is for undrained areas.

The four hydrologic soil groups are described in the following paragraphs:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Depth to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly."

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2005) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2004).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Percentage of rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage. Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an oven-dry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field. Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Liquid limit and plasticity index (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination. Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

References:

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Report—Engineering Properties

Absence of an entry indicates that the data were not estimated. The asterisk "*" denotes the representative texture; other possible textures follow the dash. The criteria for determining the hydrologic soil group for individual soil components is found in the National Engineering Handbook, Chapter 7 issued May 2007 (<http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba>). Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Engineering Properties—Clackamas County Area, Oregon														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pet Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
							L-R-H	L-R-H	L-R-H	L-R-H	L-R-H	L-R-H	L-R-H	L-R-H
76B—Salem silt loam, 0 to 7 percent slopes			<i>In</i>											
Salem	85	B	0-8	Silt loam	CL-ML, ML, CL	A-4	0-0-0	0-0-0	95-98-100	75-80-85	65-70-75	60-65-70	25-30-35	5-8-10
			8-24	Gravelly clay loam, gravelly silty clay loam, gravelly silt loam, gravelly loam	CL, GM, ML, SM, GC	A-2, A-6, A-7	0-0-0	0-3-5	55-68-80	50-63-75	40-55-70	20-43-65	35-40-45	10-15-20
			24-80	Extremely gravelly loamy sand, very gravelly loamy sand, extremely gravelly sand	GP, GP-GM, SP, SP-SM	A-1	0-0-0	0-8-15	25-40-55	15-33-50	10-23-35	0-5-10	0-5-10	NP
84—Wapato silty clay loam														
Wapato	85	C/D	0-18	Silty clay loam	ML	A-6	0-0-0	0-0-0	100-100-100	100-100-100	95-98-100	85-90-95	35-38-40	10-13-15
			18-45	Silty clay loam	ML	A-4, A-6	0-0-0	0-0-0	100-100-100	100-100-100	95-98-100	80-88-95	30-35-40	5-10-15
			45-80	Silty clay, silty clay loam	MH	A-7	0-0-0	0-0-0	100-100-100	100-100-100	95-98-100	90-93-95	50-55-60	10-15-20

Engineering Properties—Clackamas County Area, Oregon														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pet Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
							L-R-H	L-R-H	L-R-H	L-R-H	L-R-H	L-R-H	L-R-H	
91B—Woodburn silt loam, 3 to 8 percent slopes			<i>In</i>											
Woodburn	90	C	0-16	Silt loam	ML	A-4	0-0-0	0-0-0	100-100-100	95-98-100	85-90-95	70-78-85	25-28-30	NP-3-5
			16-38	Silty clay loam, silt loam	CL	A-6	0-0-0	0-0-0	100-100-100	100-100-100	95-98-100	85-90-95	30-35-40	10-15-20
			38-60	Silt loam, silty clay loam	CL-ML, ML, CL	A-4	0-0-0	0-0-0	100-100-100	100-100-100	95-98-100	80-85-90	25-30-35	5-8-10

Data Source Information

Soil Survey Area: Clackamas County Area, Oregon
 Survey Area Data: Version 12, Sep 19, 2017

Physical Soil Properties

This table shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

Sand as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. In this table, the estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Silt as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. In this table, the estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, saturated hydraulic conductivity (Ksat), plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at 1/3- or 1/10-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute linear extensibility, shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Saturated hydraulic conductivity (K_{sat}) refers to the ease with which pores in a saturated soil transmit water. The estimates in the table are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity (K_{sat}) is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at 1/3- or 1/10-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. The amount and type of clay minerals in the soil influence volume change.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In this table, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter. The content of organic matter in a soil can be maintained by returning crop residue to the soil.

Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Erosion factors are shown in the table as the K factor (K_w and K_f) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and K_{sat}. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor K_w indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor K_f indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind and/or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are described in the "National Soil Survey Handbook."

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Reference:

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. (<http://soils.usda.gov>)

Report—Physical Soil Properties

Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

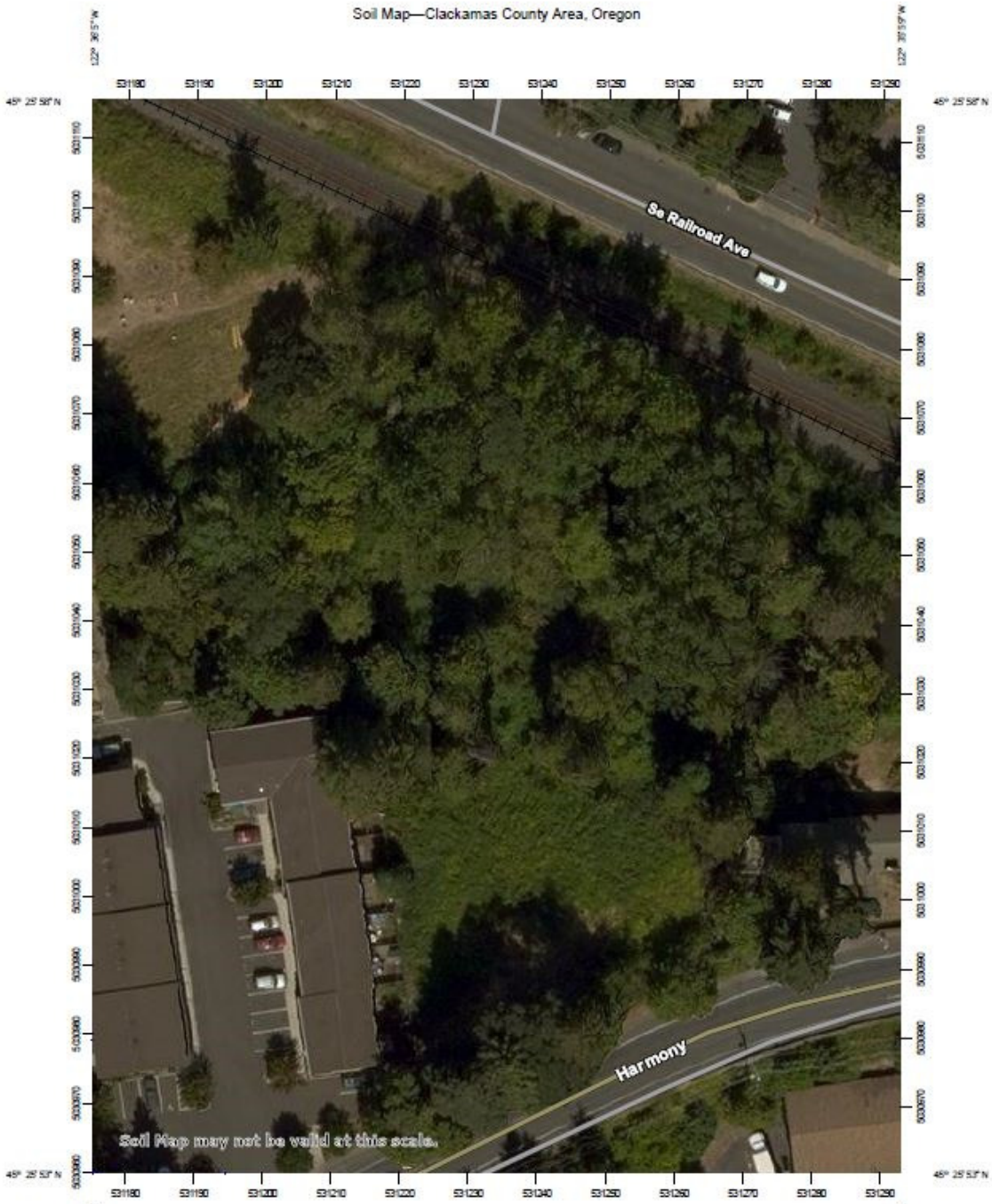
Physical Soil Properties—Clackamas County Area, Oregon														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	micro m/sec	In/In	Pct	Pct					
76B—Salem silt loam, 0 to 7 percent slopes														
Salem	0-8	-29-	-53-	15-18- 20	1.20-1.35 -1.50	4.00-9.00-14.00	0.11-0.14-0.17	0.0- 1.5- 2.9	2.0- 4.0- 6.0	.37	.37	3	6	56
	8-24	-34-	-37-	25-30- 35	1.20-1.35 -1.50	4.00-9.00-14.00	0.09-0.13-0.17	3.0- 4.5- 5.9	1.0- 2.0- 3.0	.15	.28			
	24-60	-84-	- 9-	0- 8- 15	1.30-1.45 -1.60	141.00-300.00-705.00	0.03-0.04-0.05	0.0- 1.5- 2.9	0.1- 0.6- 1.0	.02	.05			
84—Wapato silty clay loam														
Wapato	0-18	- 7-	-62-	27-31- 35	1.20-1.30 -1.40	1.40-8.00-14.00	0.19-0.20-0.21	3.0- 4.5- 5.9	4.0- 6.0- 8.0	.32	.32	5	6	48
	18-45	- 7-	-62-	27-31- 35	1.20-1.30 -1.40	1.40-3.00-4.00	0.15-0.16-0.17	3.0- 4.5- 5.9	0.5- 2.8- 5.0	.37	.37			
	45-60	- 8-	-49-	35-43- 50	1.20-1.30 -1.40	1.40-3.00-4.00	0.15-0.16-0.17	3.0- 4.5- 5.9	0.2- 1.1- 2.0	.32	.32			

Physical Soil Properties—Clackamas County Area, Oregon														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	micro m/sec	In/In	Pct	Pct					
91B—Woodburn silt loam, 3 to 8 percent slopes														
Woodburn	0-16	-14-	-71-	10-15- 20	1.20-1.30 -1.40	4.00-9.00-14.00	0.19-0.20-0.21	0.0- 1.5- 2.9	3.0- 4.0- 5.0	.37	.37	5	5	56
	16-38	- 7-	-65-	20-28- 35	1.20-1.30 -1.40	4.00-9.00-14.00	0.19-0.20-0.21	3.0- 4.5- 5.9	0.5- 1.8- 3.0	.43	.43			
	38-60	-10-	-68-	15-23- 30	1.30-1.40 -1.50	0.42-0.91-1.40	0.19-0.20-0.21	0.0- 1.5- 2.9	0.0- 0.3- 0.5	.55	.55			

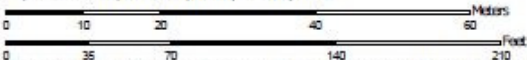
Data Source Information

Soil Survey Area: Clackamas County Area, Oregon
 Survey Area Data: Version 12, Sep 19, 2017

Soil Map—Clackamas County Area, Oregon



Map Scale: 1:758 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge-tics: UTM Zone 10N WGS84



Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

2/23/2018
Page 1 of 3

MAP LEGEND		MAP INFORMATION	
Area of Interest (AOI)	Spoil Area	<p>The soil surveys that comprise your AOI were mapped at 1:20,000.</p> <p>Warning: Soil Map may not be valid at this scale.</p> <p>Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.</p> <p>Please rely on the bar scale on each map sheet for map measurements.</p> <p>Source of Map: Natural Resources Conservation Service Web Soil Survey URL: Coordinate System: Web Mercator (EPSG:3857)</p> <p>Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.</p> <p>This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.</p> <p>Soil Survey Area: Clackamas County Area, Oregon Survey Area Data: Version 12, Sep 19, 2017</p> <p>Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.</p> <p>Date(s) aerial images were photographed: Jul 26, 2014—Sep 5, 2014</p> <p>The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.</p>	
Soil Map Unit Polygons	Stony Spot		
Soil Map Unit Lines	Very Stony Spot		
Soil Map Unit Points	Wet Spot		
Special Point Features	Other		
Blowout	Special Line Features		
Borrow Pit	Water Features		
Clay Spot	Streams and Canals		
Closed Depression	Transportation		
Gravel Pit	Rails		
Gravelly Spot	Interstate Highways		
Landfill	US Routes		
Lava Flow	Major Roads		
Marsh or swamp	Local Roads		
Mine or Quarry	Background		
Miscellaneous Water	Aerial Photography		
Perennial Water			
Rock Outcrop			
Saline Spot			
Sandy Spot			
Severely Eroded Spot			
Sinkhole			
Slide or Slip			
Sodic Spot			

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
76B	Salem silt loam, 0 to 7 percent slopes	0.0	2.9%
84	Wapato silty clay loam	1.3	88.1%
91B	Woodburn silt loam, 3 to 8 percent slopes	0.1	9.0%
Totals for Area of Interest		1.4	100.0%

WETLAND/WATERS DELINEATION REPORT

HARMONY ROAD TOWNHOMES
WETLAND/WATERS DELINEATION REPORT

DECEMBER 2017

PREPARED FOR

**Ed Williams, Old Time Investments, Inc. and
Steve Kay, Cascadia Planning and Development Services**

PREPARED BY

SWCA Environmental Consultants

**HARMONY ROAD TOWNHOMES
WETLAND AND WATERS DELINEATION REPORT
TOWNSHIP 1 SOUTH, RANGE 2 EAST, SECTION 31,
TAX LOT 2200, MILWAUKIE, CLACKAMAS COUNTY,
OREGON**

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December 2017

SWCA Project No. 39108

CONTENTS

1	INTRODUCTION	1
2	LANDSCAPE SETTING AND LAND USE	1
3	SITE ALTERATIONS	1
4	PRECIPITATION DATA AND ANALYSIS	2
5	METHODS	3
6	DESCRIPTION OF ALL WETLANDS AND OTHER NON-WETLAND WATERS	4
	6.1 Wetlands	4
	6.2 Non-wetland Waters	4
	6.3 Uplands	4
7	DEVIATION FROM LWI OR NWI	5
8	MAPPING METHOD	5
9	ADDITIONAL INFORMATION	5
10	RESULTS AND CONCLUSION	5
11	REQUIRED DISCLAIMER	5
12	LIST OF PREPARERS	6
13	LITERATURE CITED	6

Appendices

- Appendix A. Aerial Photographs
- Appendix B. Precipitation Data
- Appendix C. Wetland Determination Data Sheets
- Appendix D. Ground-level Site Photographs
- Appendix E. Vegetation List

Figures

Figure 1. Site location map.	8
Figure 2. Tax lot map with aerial photograph.....	9
Figure 3. Tax lot map from ORmap with paper base.....	10
Figure 4. Soils map.	11
Figure 5. Local Wetland Inventory map.	12
Figure 6. National Wetland Inventory map.	13
Figure 7. City of Milwaukie Water Quality Resource area map.....	14
Figure 8. Wetland and waters delineation map.....	15

Tables

Table 1. Precipitation Data for August 25, 2016 Site Visit	2
Table 2. Precipitation Data for October 17, 2017 Site Visit	2
Table 3. Precipitation Data for December 5, 2017 Site Visit.....	2
Table 4. Precipitation Data Summary	3

1 INTRODUCTION

SWCA Environmental Consultants (SWCA) conducted a wetland delineation on the subject site, which consists of Tax Lot 2200 on Tax Map 1 2E 31D, located approximately 500 feet west of the intersection of SE Harmony Road and SE Railroad Avenue, at 6115 SE Harmony Road, in Milwaukie, Oregon (Figures 1–3). Based on the tax lot map, the site is 1.18 acres. The delineation of one wetland and one stream is presented in this report. The wetland and stream extend off-site to the east and west.

2 LANDSCAPE SETTING AND LAND USE

The site is within the Kellogg Creek watershed (Hydrologic Unit Code [HUC] 12: 170900120102) (Oregon Explorer 2017). The site is bordered by SE Harmony Road to the south; an apartment complex to the west; riparian forest, open meadow, the Union Pacific railroad, and SE Railroad Avenue to the north; and an abandoned residence to the east. Land use adjacent to the site is primarily light industry to the south and residential to the west, north, and east. Surrounding topography is relatively flat and gently undulating. Site topography slopes gently to the north and then steeply down to the creek drainage. Minthorn Creek flows across the site from west to east and is a tributary of Mt. Scott Creek. The area north of the creek is relatively flat and then slopes gently to the north toward the railroad tracks.

The southern portion of the property consists of a cleared, grassy area with a row of trees along SE Harmony Road. Trees include dawn redwood (*Metasequoia glyptostroboides*), Douglas-fir (*Pseudotsuga menziesii*), bird cherry (*Prunus avium*), and big-leaf maple (*Acer macrophyllum*). The understory beneath the row of trees is predominantly Himalayan blackberry (*Rubus armeniacus*) and English ivy (*Hedera helix*). Vegetation immediately south of the creek is dominated by invasive species such as English laurel (*Prunus laurocerasus*), Himalayan blackberry, and English ivy.

The northern portion of the site is riparian forest dominated by Oregon ash (*Fraxinus latifolia*) and black cottonwood (*Populus trichocarpa*), with a mid-story of red-osier dogwood (*Cornus alba*), English hawthorn (*Crataegus monogyna*), and snowberry (*Symphoricarpos albus*). English ivy is abundant throughout the corridor and a thornless blackberry variety (*Rubus* sp.) is spreading into the site from a nearby clearing to the west. Yellow-flag iris (*Iris pseudacorus*) borders the creek, with occasional patches of skunk cabbage (*Lysichiton americanus*).

3 SITE ALTERATIONS

A single-family residence and surrounding trees were removed from the site in 2010. A sewer line runs along the northern property boundary and crosses the stream along the eastern property boundary, with a manhole located south of the stream in an upland area. There is a small gravel pad in the southwest corner of the property, adjacent to SE Harmony Road.

There is a large culvert upstream, west of the site, and a concrete dam and weir downstream, east of the site. The dam impounds the stream, which backs up water onto the subject site. Aerial photographs of the site are included in Appendix A.

4 PRECIPITATION DATA AND ANALYSIS

The Oregon City (OR6334) WETS (short for wetlands climate analysis) table was used to determine historic rainfall averages. Oregon City receives an average of 43.07 inches of rainfall each year. The WETS table describes the growing season as extending from approximately January 30 to December 24 of each year, for a total of 328 days.

Precipitation data were obtained from the Portland KGW-TV weather station via the National Oceanic and Atmospheric Administration (NOAA) Regional Climate Centers (RCC) Applied Climate Information System (ACIS) AgACIS website (NOAA 2017). Precipitation data are shown in Table 1, and raw data are included in Appendix B. Tables 1, 2, and 3 show the monthly precipitation averages according to the WETS station for the 3 months prior to the August 25, 2016; October 17, 2017; and December 5, 2017 site visits, respectively. Table 4 provides information on rainfall to the date of each field visit.

Table 1. Precipitation Data for August 25, 2016, Site Visit

Month	Average (inches)	30% Chance Will Have		Observed Precipitation (inches)	Within Normal Range?
		Less Than (inches)	More Than (inches)		
July	0.59	0.35	0.93	0.75	Above Normal (127%)
June	1.69	0.85	1.94	1.11	Below Normal (66%)
May	2.55	1.59	3.12	1.30	Below Normal (51%)

Source: Portland KGW-TV, OR WETS table and precipitation data for 2016.

Note: Monthly averages based on the climate period 1971–2000.

Table 2. Precipitation Data for October 17, 2017 Site Visit

Month	Average (inches)	30% Chance Will Have		Observed Precipitation (inches)	Within Normal Range?
		Less Than (inches)	More Than (inches)		
September	1.54	0.82	2.06	2.53	Above Normal (164%)
August	0.71	0.32	1.17	0.09	Below Normal (13%)
July	0.59	0.35	0.93	0.00	Below Normal (0%)

Source: Portland KGW-TV, OR WETS table and precipitation data for 2016.

Note: Monthly averages based on the climate period 1971–2000.

Table 3. Precipitation Data for December 5, 2017 Site Visit

Month	Average (inches)	30% Chance Will Have		Observed Precipitation (inches)	Within Normal Range?
		Less Than (inches)	More Than (inches)		
November	6.74	4.40	7.90	7.90	Above Normal (117%)
October	3.42	1.85	4.14	5.19	Above Normal (152%)
September	1.54	0.82	2.06	2.53	Above Normal (164%)

Source: Portland KGW-TV, OR WETS table and precipitation data for 2016.

Note: Monthly averages based on the climate period 1971–2000.

Table 4. Precipitation Data Summary

Date of Field Visit	Day of Field Visit (inches)	Two Weeks Prior	WYTD* (inches)	Percent of Normal for WYTD	CYTD* (inches)	Percent of Normal for CYTD
August 25, 2016	0.00	0.00	53.81	130%	25.20	105%
October 17, 2017	0.00	0.83	0.83	65%	37.68	139%
December 5, 2017	0.00	3.06	13.65	122%	50.50	137%

Source: Portland KGW-TV precipitation data for 2016 and 2017.

Note: WYTD = Water Year to Date, CYTD = Current Year to Date

Using the typical template for antecedent rainfall (Appendix B), these data show that the overall preceding rainfall was within the normal range for the August 2016 and October 2017 field visits, and wetter than normal for the December 2017 site visit. Preceding precipitation did not alter our wetland delineation approach.

5 METHODS

The methodology used for determining the presence of wetlands followed the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)* (U.S. Army Corps of Engineers [USACE] 2010), used by both the Oregon Department of State Lands (DSL) and the USACE. Fieldwork for documenting site conditions and delineating the wetland boundary was conducted on August 28, 2016, by C. Mirth Walker, Professional Wetland Scientist (PWS), and Evan Dulin, wetland scientist/biologist, and on October 17, 2017, and December 5, 2017, by C. Mirth Walker and Tom Dee, PWS. Soils, vegetation, and hydrology were documented at nine sample plot locations (Appendix C). Wetland boundaries were flagged in the field with pink wetland delineation pin flags and pink wetlands boundary streamers, and sample plots were marked with yellow pin flags with red streamers. Representative ground-level site photographs are included in Appendix D. A list of vegetation observed on-site and wetland indicator status is included in Appendix E.

Non-wetland waters were delineated according to Regulatory Guidance Letter 05-05 (USACE 2005) and Oregon Administrative Rules (OAR) (DSL 2016aa). Ordinary High Water Line (OHWL) determinations were based on observations of scour, sediment deposition, debris wracks, and other readily observable indicators. The OHWL was marked in the field with red streamers.

According to the Natural Resources Conservation Service (NRCS), soils on the majority of the site are mapped as Wapato silty clay loam (Unit 84), with a small portion of Woodburn silt loam, 3%–8% slopes (Unit 91B) in the southwestern corner and Salem silt loam, 0%–7% slopes (Unit 76B) in the northwestern corner of the property (NRCS 2016) (Figure 4). Wapato soils are hydric and Salem soils are upland soils. Woodburn soils are upland soils with small hydric inclusions of Huberly and Dayton soils.

The Local Wetland Inventory (LWI) map, National Wetland Inventory (NWI) map, and the City of Milwaukie’s preliminary Water Quality Resource (WQR) mapping provided by Metro are shown in Figures 5, 6, and 7.

6 DESCRIPTION OF ALL WETLANDS AND OTHER NON-WETLAND WATERS

6.1 Wetlands

Wetland A

There is one wetland within the study area (Wetland A), which is a small, approximately 0.12-acre (5,410-square-foot) wetland on the north side of Minthorn Creek (Figure 6). The wetland is classified as palustrine forested (PFO) using the *Classification of Deepwater Habitats of the United States* (Cowardin et al. 1979), and as valley slope (SV) and riverine flow-through (RFT) using the *Guidebook for Hydrogeomorphic (HGM)-based Assessment of Oregon Wetland and Riparian Sites: Statewide Classification and Profiles* (Adamus 2001).

Wetland determination data forms are provided in Appendix C. The wetland was dominated by Oregon ash, red osier dogwood, English Hawthorn, colonial bentgrass (*Agrostis capillaris*), taper-fruit short-scale sedge (*Carex leptopoda*), skunk cabbage, yellow-flag iris, and soft rush (*Juncus effusus*). Soils met the Redox Dark Surface (F6) and Depleted Matrix (F3) hydric soil indicators. The Saturation (A3) wetland hydrology indicator was observed at Plot 6 during the October 2017 site visit.

Wetland A receives hydrology from the hyporheic zone associated with Minthorn Creek and surface flow from the slope to the northwest. The wetland is contiguous with the stream and occasionally receives overbank flooding during seasonal precipitation events. The dam or weir to the east of the study area causes the stream to back up and inundate portions of the wetland. The wetland extends off-site to the east and west.

6.2 Non-wetland Waters

Minthorn Creek

There is one non-wetland water within the study area. Minthorn Creek is a freshwater, perennial stream that flows across the center of the site from west to east (Figure 8). Minthorn Creek occupies approximately 0.16 acre (6,988 square feet) within the study area, and extends off-site to the east and west. Minthorn Creek is a tributary of Mt. Scott Creek.

The OHWL of Minthorn Creek was delineated based on evidence of high water, such as drift deposits (including sediment on tires and some Styrofoam debris), debris wracks, sparse vegetation, soil cracks, and changes in topography and plant communities. The bed and banks were composed of silt loam. The channel is relatively stable due to the abundant root systems of adjacent vegetation. Minthorn Creek overtops its banks seasonally. Floodplain roughness is high, due to abundant riparian vegetation and large woody debris. There is a small concrete dam or weir approximately 50 feet east and downstream of the eastern site boundary. The dam impounds water that backs up into the site throughout much of the year.

6.3 Uplands

Uplands on the site were typified by a rise in elevation and a change in plant community to less hydrophytic vegetation. The upland area north of the creek was dominated by big-leaf maple and English laurel in the tree canopy, by English hawthorn and English laurel in the mid-story, and by English ivy and Himalayan blackberry in the understory. The upland area south of the creek was dominated by perennial ryegrass (*Lolium perenne*), with a few mature trees, including western red cedar (*Thuja plicata*), Douglas-fir, and dawn redwood. Sample plots in upland areas lacked hydric soils and indicators of wetland

hydrology, except for Plot 9 in the northeast corner of the site, which displayed a high water table during our December 2017 site visit.

7 DEVIATION FROM LWI OR NWI

The LWI conducted by SRI/Shapiro (1994) does not depict any wetlands or streams within the study area (Figure 5). SWCA's wetland and waters delineation results do not concur with the LWI mapping. The NWI is shown in Figure 6 and shows Minthorn Creek as a riverine upper perennial unconsolidated bottom deepwater habitat with a permanently flooded water regime (R3UBH). The City of Milwaukie's preliminary WQR mapping provided by Metro is shown in Figure 7 (City of Milwaukie 2017). There are no Habitat Conservation Areas (HCA) on the site. Plots 8 and 9 disprove the presence of a railroad side ditch along the northern property boundary.

8 MAPPING METHOD

The wetland boundary, OHWL flags, and sample plot locations (with the exception of Plots 6–9) were professionally land surveyed by Summit Land Surveyors. The surveyed delineation map is shown on Figure 6.

9 ADDITIONAL INFORMATION

Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) 41005C0036D indicates there is no 100-year floodplain within the site (FEMA 2017). The DSL Essential Salmonid Habitat (ESH) mapper (DSL 2017) illustrates Mt. Scott Creek, approximately 400 feet south of the site, as ESH containing coho salmon (*Oncorhynchus kisutch*) and winter steelhead (*O. mykiss*). Minthorn Creek is not mapped as ESH, and it is assumed that there are fish passage barriers present. The Oregon Department of Fish and Wildlife (ODFW) Fish Passage Barrier mapper does not depict a barrier at the confluence with Mt. Scott Creek (ODFW 2017).

10 RESULTS AND CONCLUSION

The boundary of one wetland (0.12 acre) and one non-wetland water (0.16 acre) were delineated within the study area, and both extend off-site to the east and west. The wetland and non-wetland water will likely be determined to be jurisdictional by DSL and the USACE. The wetland is classified as SV/RFT and PFO. The non-wetland water is classified as riverine impounding because of the dam just downstream. The centroid latitude and longitude of Wetland A are 45.432332 and -122.600578.

11 REQUIRED DISCLAIMER

This report documents the investigation, best professional judgment, and conclusions of the investigators. It is correct and complete to the best of our knowledge. It should be considered a Preliminary Jurisdictional Determination of wetlands and other waters and used at your own risk unless it has been reviewed and approved in writing by the Oregon DSL in accordance with Oregon Administrative Rules 141-090-0005 through 141-090-0055.

12 LIST OF PREPARERS

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TJD 1/11



Tom Dee, PWS
Wetland Scientist

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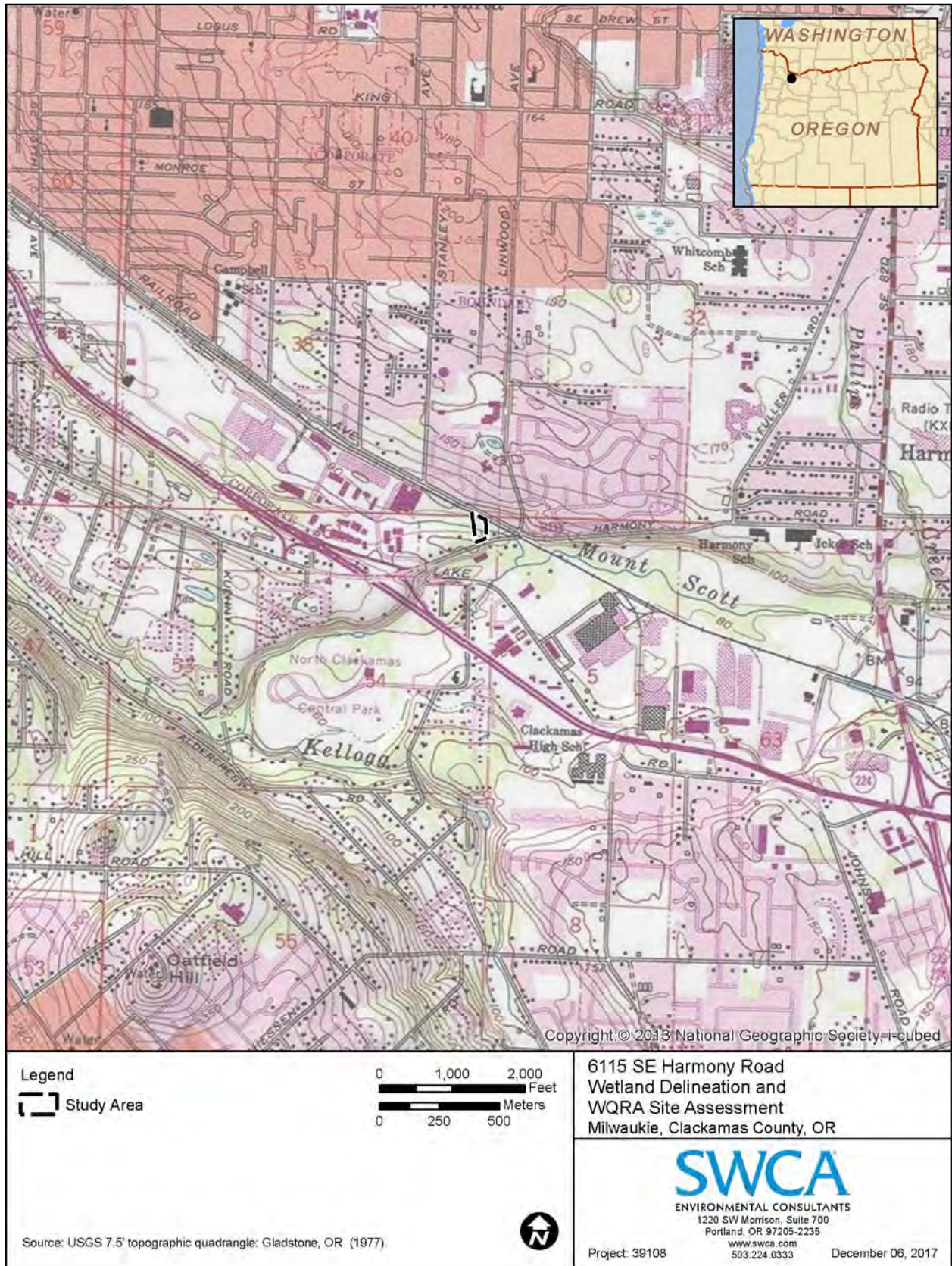


Figure 1. Site location map.



Figure 2. Tax lot map with aerial photograph.

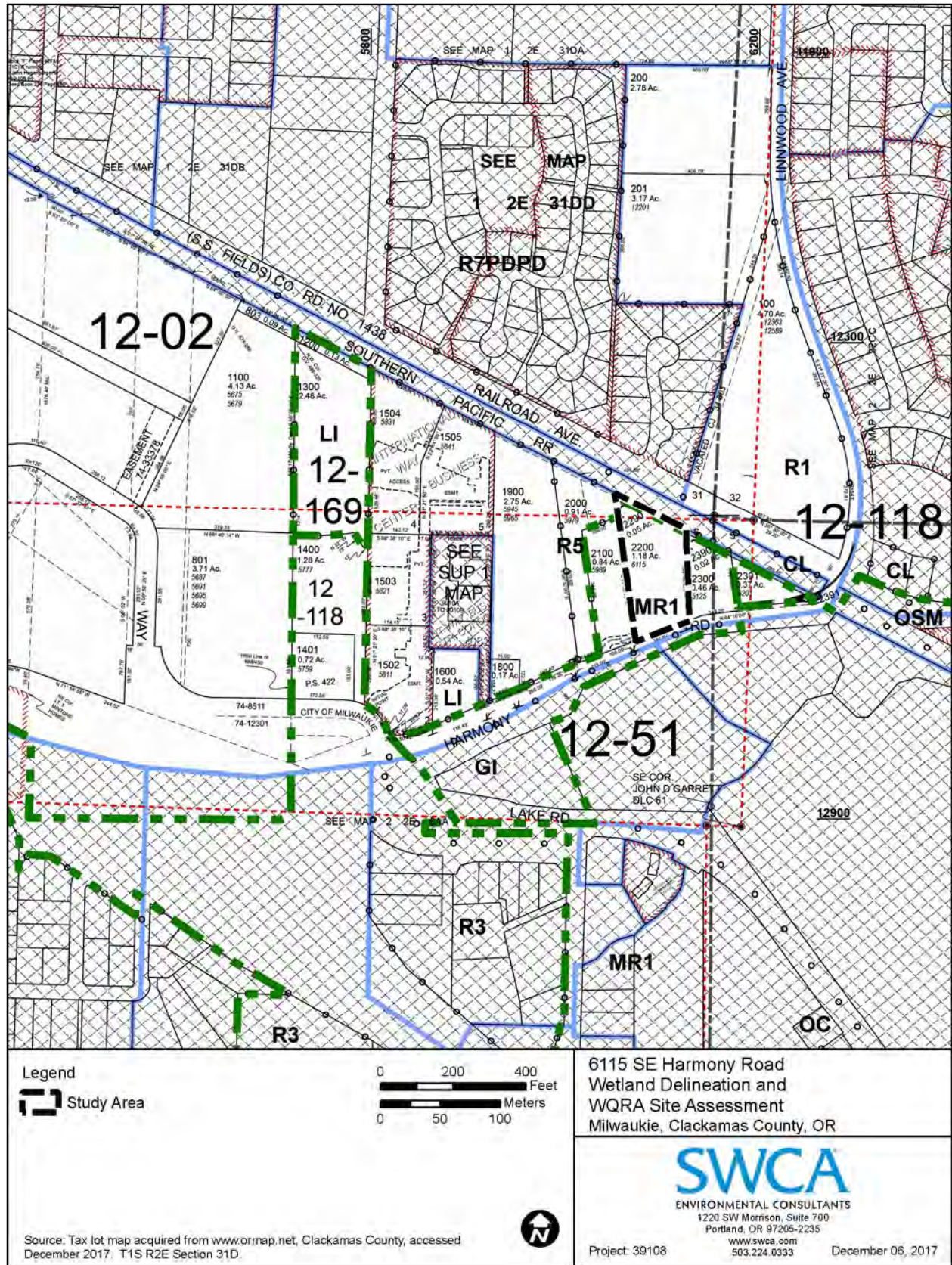


Figure 3. Tax lot map from ORmap with paper base.



Figure 4. Soils map.

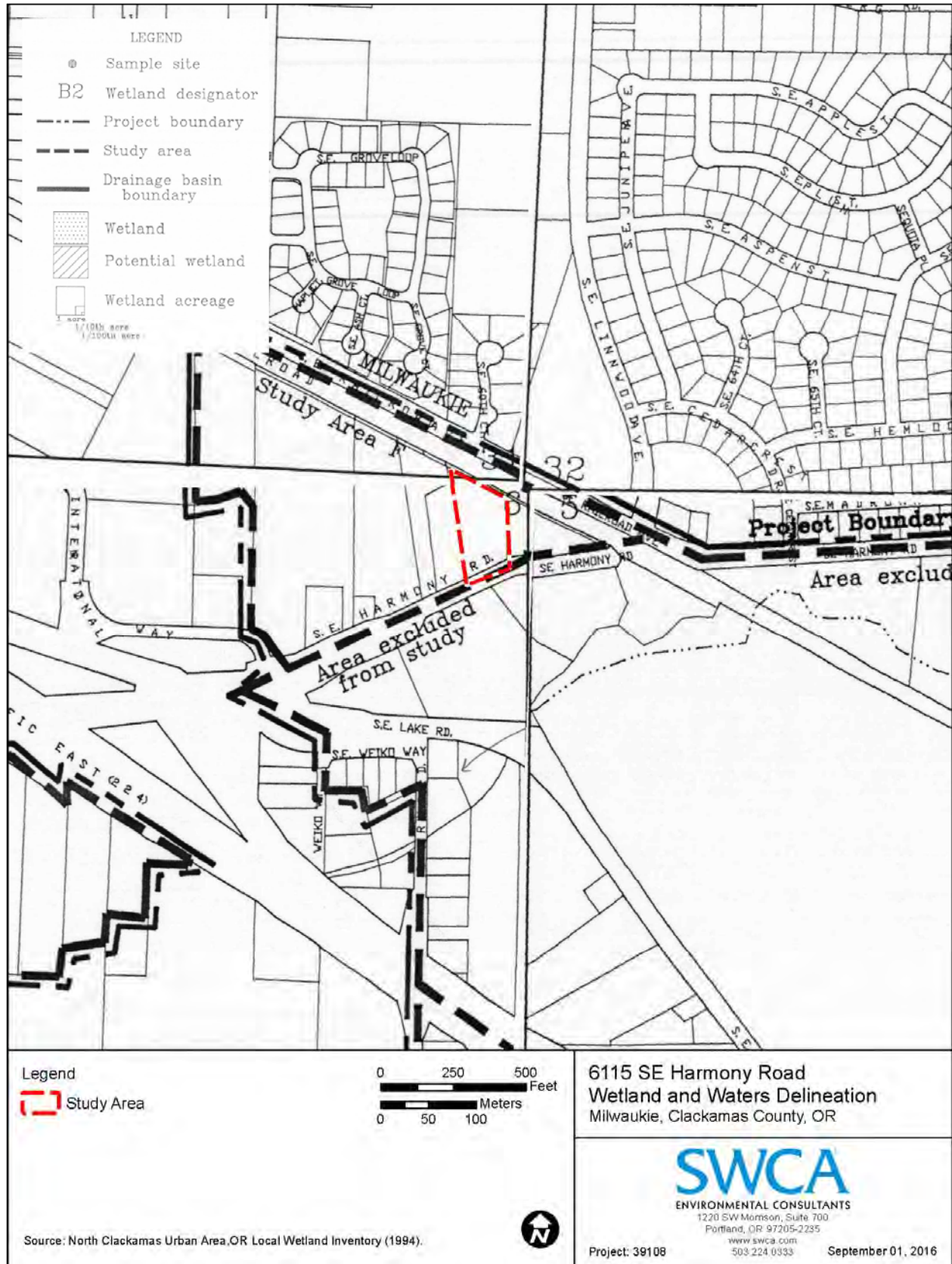


Figure 5. Local Wetland Inventory map.

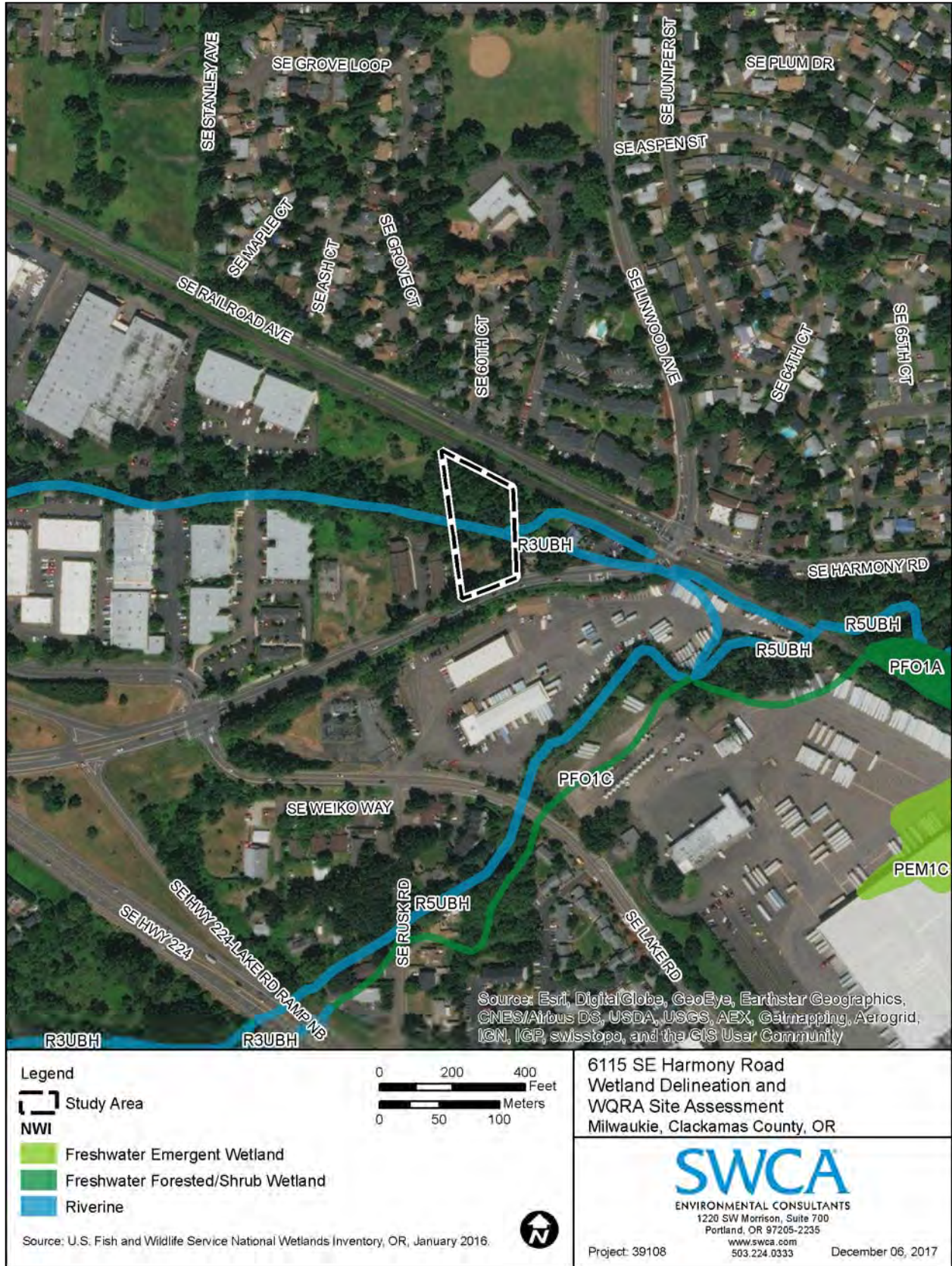


Figure 6. National Wetland Inventory map.

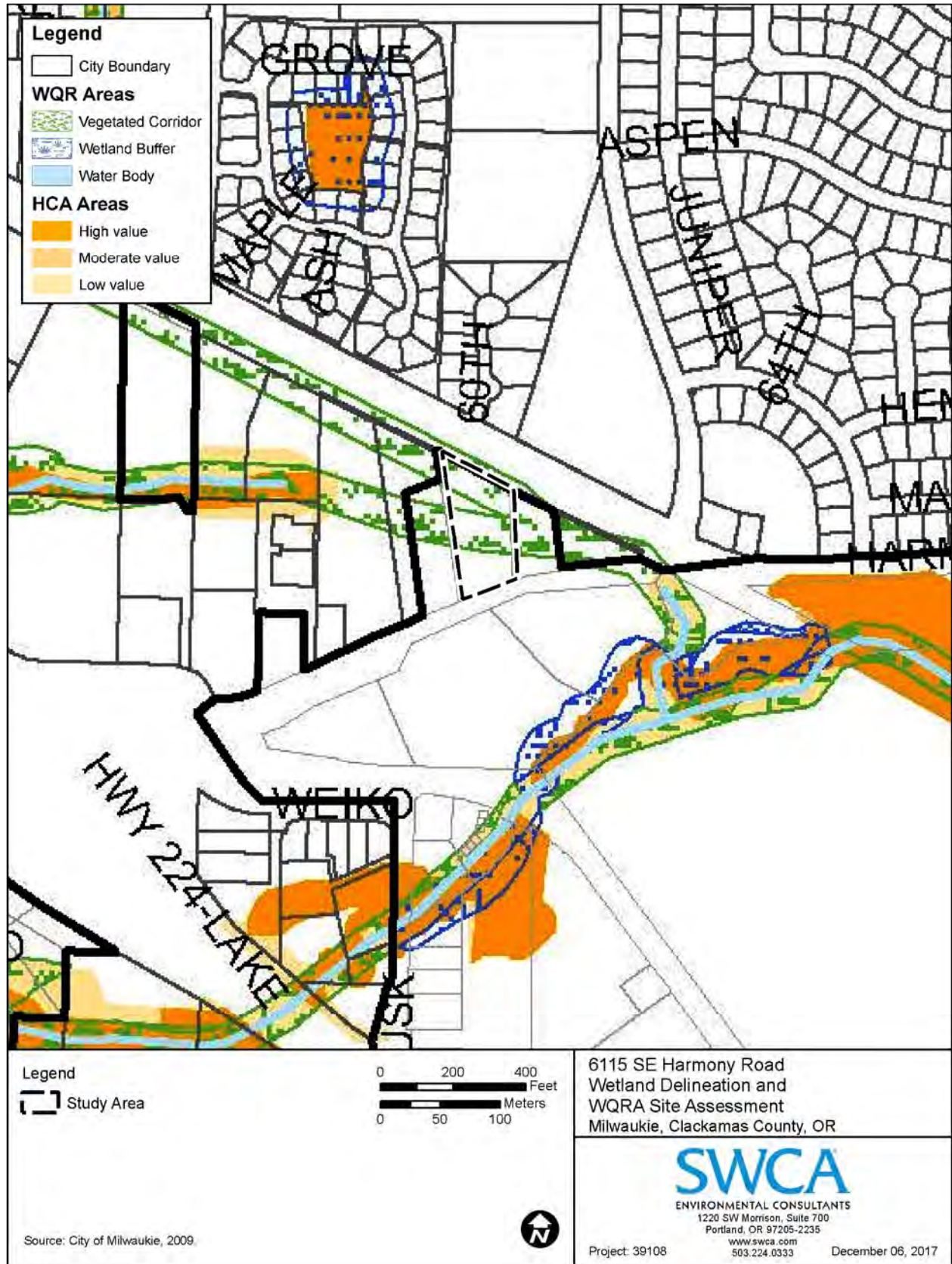
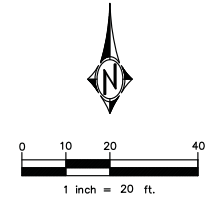
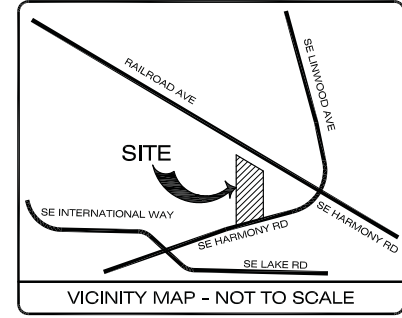
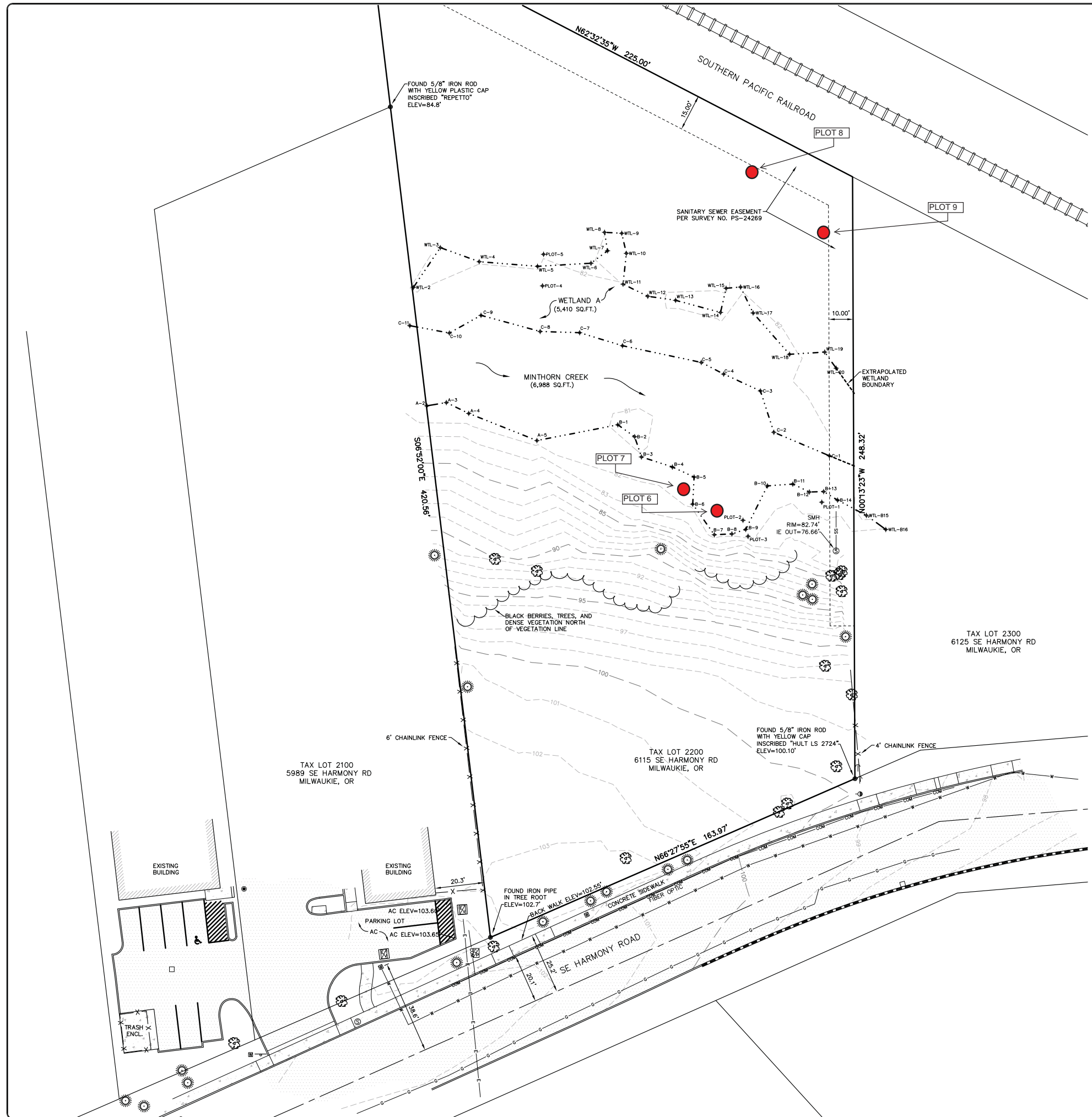


Figure 7. City of Milwaukie Water Quality Resource area map.



SURVEY LEGEND - EXISTING FEATURES

	CONCRETE WALL
	RAIL ROAD
	FENCE
	MINOR CONTOUR
	MAJOR CONTOUR
	WETLAND DELINEATION
	SANITARY SEWER LINE
	GAS LINE
	WATER LINE
	WATER METER/SERVICE
	WATER VALVE
	CATCH BASIN / AREA DRAIN
	SANITARY SEWER MANHOLE
	UTILITY GUY POLE
	UTILITY GUY WIRE
	ELECTRIC VAULT
	COMMUNICATIONS PEDESTAL
	DECIDUOUS TREE
	EVERGREEN TREE
	SURVEY FOUND MONUMENT

GENERAL NOTES:

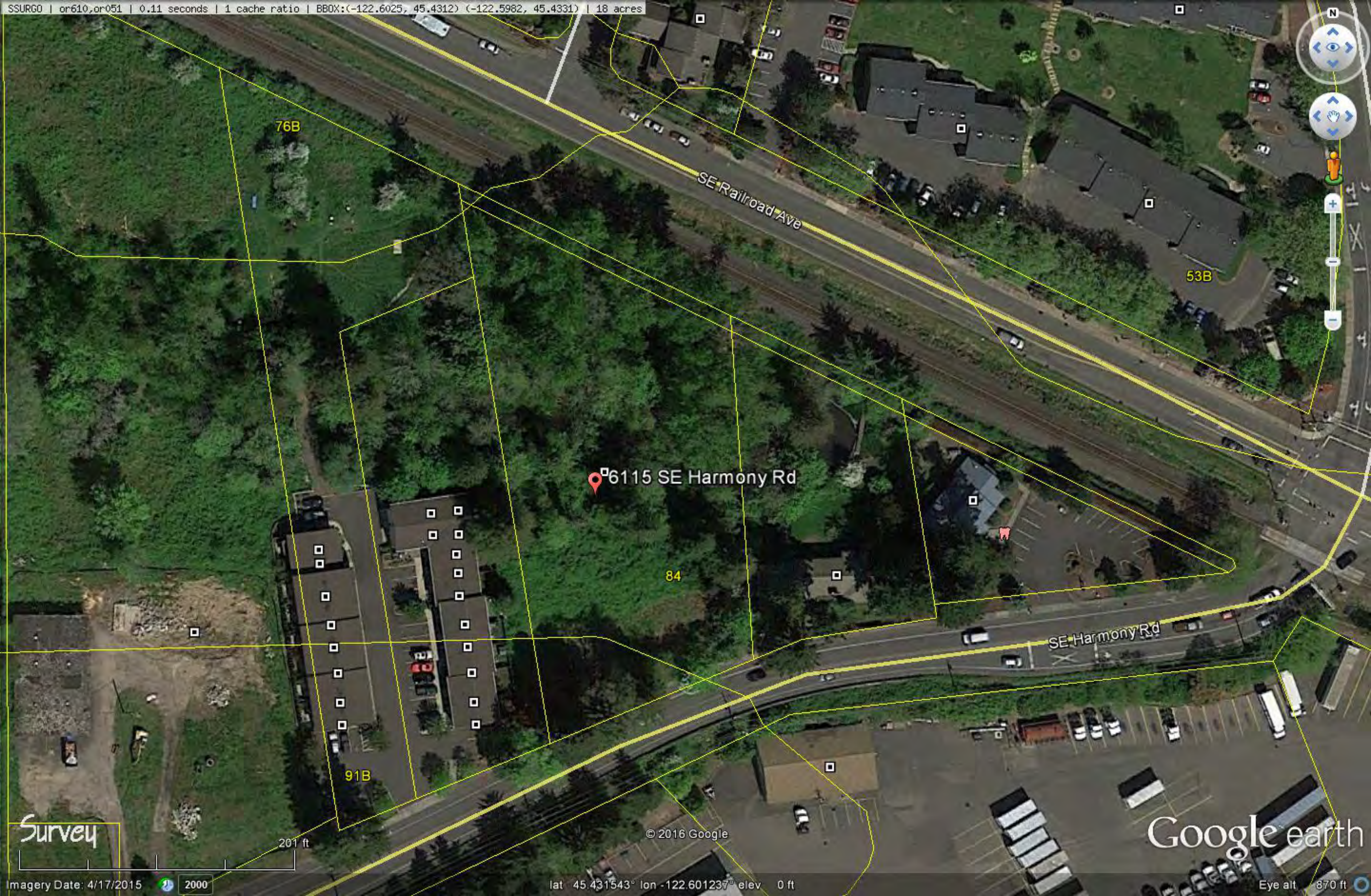
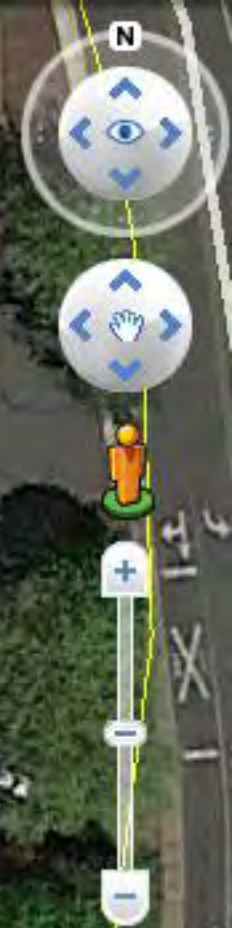
- BENCHMARK INFORMATION, 3-1/2" BRONZE DISK IN SIDEWALK PER USBT 2001-040, BEING THE NORTHEAST CORNER OF JOHN GARRETT D/LC NO. 61, ALSO BEING THE SOUTHEAST CORNER OF JOHN GARRETT D/LC NO. 38 ON THE NORTH LINE OF SECTION 5, SEE CLACKAMAS COUNTY SN 2004-356 SHEET 4 OF 14. ELEVATION = 85.30'
- THE BOUNDARY DEPICTED HEREON IS PRELIMINARY AND IS SUBJECT TO CHANGE. IF ADDITIONAL MONUMENTS ARE FOUND ALONG THE NORTH LINE, THE BOUNDARY RETRACEMENT WILL BE REVISED ACCORDINGLY.
- THE PURPOSE OF THIS SURVEY WAS TO PROVIDE A TOPOGRAPHIC BASE MAP OF TAX LOT 2200 TAX MAP 1S 2E 31D SHOWING EXISTING CONDITIONS ALONG WITH THE WETLAND DELINEATION AND MARKERS. THE AREA NORTH OF THE HEAVY VEGETATION DEMARKATION HAS NOT BEEN ACCURATELY SURVEYED, OTHER THAN THE WETLAND MARKERS DEPICTED HEREON.
- AS OF THE DATE OF THIS MAPPING, THERE WERE NO UNDERGROUND UTILITY PAINT MARKINGS TO MAP THE SUBSURFACE UTILITIES.
- MANHOLES SHOWN HEREON ARE TO CENTER OF MANHOLE LID, NOT CENTER OF STRUCTURE.
- THE WETLAND, WATER BOUNDARIES AND SAMPLE PLOT LOCATIONS, DELINEATED WITH EITHER FLAGS IN SOIL OR FLAGGING TIED TO BRANCHES, HAVE A HORIZONTAL MAPPING ACCURACY OF ±1'.
- PLOTS 6-9 WERE GPS-SURVEYED BY SWCA AND HAVE A HORIZONTAL MAPPING ACCURACY OF +/- 1 M (3.28 FEET).

SUMMIT JOB NO.:	998-187
PREPARED FOR:	SE HARMONY RD TOPO
DATE:	9/19/16
DRAWN BY:	CLM
DESIGNED BY:	ED WILLIAMS
MODIFIED:	10/05/16 - CLM - ADDED WETLAND BUFFER LINES
MODIFIED:	12/08/17 - CLM - ADDED ADJ. TOPO IN OFF-SITE PARKING AREA ON TL 2100
MODIFIED:	

TOPOGRAPHIC SURVEY
EXISTING CONDITIONS
 TAX LOT 2200
 TAX MAP 1S 2E 31D
 CLACKAMAS COUNTY, OREGON



APPENDIX A
Aerial Photographs



76B

53B

6115 SE Harmony Rd

84

91B

SE Harmony Rd

SE Railroad Ave

Survey

201 ft

© 2016 Google

Google earth

May 2017

6115 SE Harmony Rd

SE Railroad Ave

SE Harmony Rd

APPENDIX B
Precipitation Data

Assessing Rainfall for the Preceding 3-Month Period (Antecedent Rainfall)									Climate Period	
WETS Station: Portland KGW-TV, 1971-2000									1981-2010	
Measured Rainfall: Portland KGW-TV 2015-2016 Water Year									Oct. 1	Jan. 1
Prior Month Most Recent First	WETS Rainfall Percentile		Measured Rainfall inches	Condition Dry, Wet, Normal	Condition Value (1=dry, 2=normal, 3=wet)	Month Weight	Multiply previous 2 columns	Departure from Normal*	Departure from Normal*	
	30th	70th						12.71	1.20	
1st July	0.35	0.93	0.75	Normal	2	3	6	WYTD*	CYTD*	
2nd June	0.85	1.94	1.11	Normal	2	2	4	53.81	25.20	
3rd May	1.59	3.12	1.30	Dry	1	1	1	Normal	Normal	
			3.16					41.10	24.00	
				<i>Normals</i>				*As Of Survey On: 8/25/2016		
Jan-16	3.77	7.31	8.93	6.14						
Feb-16	3.57	6.32	4.87	4.63						
Mar-16	3.39	5.17	5.71	4.50						
Apr-16	2.18	3.71	2.46	3.40						
May-16	1.59	3.12	1.30	2.55						
Jun-16	0.85	1.94	1.11	1.69						
Jul-16	0.35	0.93	0.75	0.59						
Aug-16	0.32	1.17	0.16	0.71						
Sep-16	0.82	2.06		1.54						
Oct-15	1.85	4.14	4.39	3.42						
Nov-15	4.40	7.90	5.61	6.74						
Dec-15	4.43	7.71	18.61	6.94						
	27.52	51.48	53.90	42.85		Sum	11			
Rainfall of prior period was: drier than normal (sum is 6-9), normal (sum is 10-14), wetter than normal (sum is 15-18)								Normal		

WETS Table: <http://agacis.rcc-acis.org/?fips=41051>
Daily/Monthly Normals: <http://agacis.rcc-acis.org/?fips=41051>
Daily Data for a Month: <http://agacis.rcc-acis.org/?fips=41051>

Assessing Rainfall for the Preceding 3-Month Period (Antecedent Rainfall)								Climate Period	
WETS Station: Portland KGW-TV, 1971-2000								1981-2010	
Measured Rainfall: Portland KGW-TV 2016-2017 Water Year								Oct. 1	Jan. 1
Prior Month Most Recent First	WETS Rainfall Percentile		Measured Rainfall inches	Condition Dry, Wet, Normal	Condition Value (1=dry, 2=normal, 3=wet)	Month Weight	Multiply previous 2 columns	Departure from Normal*	Departure from Normal*
	30th	70th						-0.45	10.65
1st September	0.82	2.06	2.53	Wet	3	3	9	WYTD*	CYTD*
2nd August	0.32	1.17	0.09	Dry	1	2	2	0.83	37.68
3rd July	0.35	0.93	0.00	Dry	1	1	1	Normal	Normal
			2.62					1.28	27.03
				<i>Normals</i>					
Jan-17	3.77	7.31	5.65	6.14					
Feb-17	3.57	6.32	12.18	4.63					
Mar-17	3.39	5.17	8.40	4.50					
Apr-17	2.18	3.71	4.63	3.40					
May-17	1.59	3.12	2.25	2.55					
Jun-17	0.85	1.94	1.12	1.69					
Jul-17	0.35	0.93	0.00	0.59					
Aug-17	0.32	1.17	0.09	0.71					
Sep-17	0.82	2.06	2.53	1.54					
Oct-17	1.85	4.14	5.19	3.42					
Nov-17	4.40	7.90		6.74					
Dec-17	4.43	7.71		6.94					
	27.52	51.48	42.04	42.85		Sum	12		
Rainfall of prior period was: drier than normal (sum is 6-9), normal (sum is 10-14), wetter than normal (sum is 15-18)								Normal	

*As Of Survey On: 10/17/2017

WETS Table: <http://agacis.rcc-acis.org/?fips=41051>
Daily/Monthly Normals: <http://agacis.rcc-acis.org/?fips=41051>
Daily Data for a Month: <http://agacis.rcc-acis.org/?fips=41051>

Assessing Rainfall for the Preceding 3-Month Period (Antecedent Rainfall)								Climate Period	
WETS Station: Portland KGW-TV, 1971-2000								1981-2010	
Measured Rainfall: Portland KGW-TV 2016-2017 Water Year								Oct. 1	Jan. 1
Prior Month Most Recent First	WETS Rainfall Percentile		Measured Rainfall inches	Condition Dry, Wet, Normal	Condition Value (1=dry, 2=normal, 3=wet)	Month Weight	Multiply previous 2 columns	Departure from Normal*	Departure from Normal*
	30th	70th						2.44	13.54
1st November	4.40	7.90	7.90	Normal	2	3	6	WYTD*	CYTD*
2nd October	1.85	4.14	5.19	Wet	3	2	6	13.65	50.50
3rd September	0.82	2.06	2.53	Wet	3	1	3	Normal	Normal
			15.62					11.21	36.96
				<i>Normals</i>				*As Of Survey On: 12/5/2017	
Jan-17	3.77	7.31	5.65	6.14					
Feb-17	3.57	6.32	12.18	4.63					
Mar-17	3.39	5.17	8.40	4.50					
Apr-17	2.18	3.71	4.63	3.40					
May-17	1.59	3.12	2.25	2.55					
Jun-17	0.85	1.94	1.12	1.69					
Jul-17	0.35	0.93	0.00	0.59					
Aug-17	0.32	1.17	0.09	0.71					
Sep-17	0.82	2.06	2.53	1.54					
Oct-17	1.85	4.14	5.19	3.42					
Nov-17	4.40	7.90	7.90	6.74					
Dec-17	4.43	7.71		6.94					
	27.52	51.48	49.94	42.85		Sum	15		
Rainfall of prior period was: drier than normal (sum is 6-9), normal (sum is 10-14), wetter than normal (sum is 15-18)								Wetter than Normal	

WETS Table: <http://agacis.rcc-acis.org/?fips=41051>
Daily/Monthly Normals: <http://agacis.rcc-acis.org/?fips=41051>
Daily Data for a Month: <http://agacis.rcc-acis.org/?fips=41051>

Date	Max Temperature	Min Temperature	Precipitation	Snowfall	Snow Depth
2016-08-01	77	54	0	0	0
2016-08-02	75	56	0	0	0
2016-08-03	78	54	0	0	0
2016-08-04	87	61	0	0	0
2016-08-05	79	60	0	0	0
2016-08-06	72	54	0	0	0
2016-08-07	73	57	0	0	0
2016-08-08	70	57	0.14	0	0
2016-08-09	68	56	0.02	0	0
2016-08-10	77	56	0	0	0
2016-08-11	86	60	0	0	0
2016-08-12	96	65	0	0	0
2016-08-13	91	66	0	0	0
2016-08-14	86	58	0	0	0
2016-08-15	86	59	0	0	0
2016-08-16	83	58	0	0	0
2016-08-17	79	57	0	0	0
2016-08-18	95	61	0	0	0
2016-08-19	98	69	0	0	0
2016-08-20	98	66	0	0	0
2016-08-21	77	57	0	0	0
2016-08-22	72	52	0	0	0
2016-08-23	82	55	0	0	0
2016-08-24	89	61	0	0	0
2016-08-25	92	65	0	0	0
2016-08-26	94	64	0	0	0
2016-08-27	82	62	0	0	0
2016-08-28	83	56	0	0	0
2016-08-29	84	58	0	0	0
2016-08-30	72	56	0	0	0
2016-08-31	68	58 T		0	0
Average Sun	82.2	59	0.16	0	0

Date	Max Temperature	Min Temperature	Precipitation	Snowfall	Snow Depth
2017-07-01	74	55	0	0	0
2017-07-02	79	54	0	0	0
2017-07-03	76	56	0	0	0
2017-07-04	82	55	0	0	0
2017-07-05	90	59	0	0	0
2017-07-06	89	56	0	0	0
2017-07-07	77	56	0	0	0
2017-07-08	85	53	0	0	0
2017-07-09	84	58	0	0	0
2017-07-10	77	56	0	0	0
2017-07-11	77	52	0	0	0
2017-07-12	81	55	0	0	0
2017-07-13	75	56	0	0	0
2017-07-14	84	56	0	0	0
2017-07-15	79	56	0	0	0
2017-07-16	72	54	0	0	0
2017-07-17	79	55	0	0	0
2017-07-18	84	56	0	0	0
2017-07-19	80	54	0	0	0
2017-07-20	73	58	0	0	0
2017-07-21	82	56	0	0	0
2017-07-22	88	60	0	0	0
2017-07-23	81	64	0	0	0
2017-07-24	86	58	0	0	0
2017-07-25	87	61	0	0	0
2017-07-26	84	59	0	0	0
2017-07-27	75	58	0	0	0
2017-07-28	80	55	0	0	0
2017-07-29	85	54	0	0	0
2017-07-30	86	61	0	0	0
2017-07-31	88	55	0	0	0
Average Sun	81.3	56.5	0	0	0

Date	Max Temperature	Min Temperature	Precipitation	Snowfall	Snow Depth
2017-08-01	94	66	0	0	0
2017-08-02	100	70	0	0	0
2017-08-03	103	72	0	0	0
2017-08-04	94	67	0	0	0
2017-08-05	88	58	0	0	0
2017-08-06	87	61	0	0	0
2017-08-07	86	63	0	0	0
2017-08-08	89	60	0	0	0
2017-08-09	90	62	0	0	0
2017-08-10	87	61	0	0	0
2017-08-11	84	61	0	0	0
2017-08-12	77	58 T		0	0
2017-08-13	73	57	0.09	0	0
2017-08-14	72	51	0	0	0
2017-08-15	80	54	0	0	0
2017-08-16	83	55	0	0	0
2017-08-17	77	60	0	0	0
2017-08-18	79	56	0	0	0
2017-08-19	77	58	0	0	0
2017-08-20	78	56	0	0	0
2017-08-21	86	60	0	0	0
2017-08-22	88	63	0	0	0
2017-08-23	81	60	0	0	0
2017-08-24	73	60	0	0	0
2017-08-25	79	55	0	0	0
2017-08-26	88	58	0	0	0
2017-08-27	94	63	0	0	0
2017-08-28	97	65	0	0	0
2017-08-29	86	64	0	0	0
2017-08-30	79	60	0	0	0
2017-08-31	80	62	0	0	0
Average Sun	84.8	60.5	0.09	0	0

Date	Max Temperature	Min Temperature	Precipitation	Snowfall	Snow Depth
2017-09-01	89	60	0	0	0
2017-09-02	95	60	0	0	0
2017-09-03	92	67	0	0	0
2017-09-04	88	65	0	0	0
2017-09-05	90	70	0	0	0
2017-09-06	82	65	0	0	0
2017-09-07	82	65	0	0	0
2017-09-08	73	64	0	0	0
2017-09-09	79	62	0.04	0	0
2017-09-10	75	58	0	0	0
2017-09-11	89	58	0	0	0
2017-09-12	83	63	0	0	0
2017-09-13	72	52	0	0	0
2017-09-14	74	54	0	0	0
2017-09-15	79	52	0	0	0
2017-09-16	77	56	0	0	0
2017-09-17	64	55	0.08	0	0
2017-09-18	59	51	0.44	0	0
2017-09-19	62	51	0.3	0	0
2017-09-20	60	49	1.44	0	0
2017-09-21	63	47	0.01	0	0
2017-09-22	67	48	0	0	0
2017-09-23	71	51	0	0	0
2017-09-24	72	50	0	0	0
2017-09-25	65	54 T		0	0
2017-09-26	77	55	0	0	0
2017-09-27	84	57	0	0	0
2017-09-28	86	60	0	0	0
2017-09-29	69	53	0.1	0	0
2017-09-30	64	49	0.12	0	0
Average Sun	76.1	56.7	2.53	0	0

Date	Max Temperature	Min Temperature	Precipitation	Snowfall	Snow Depth
2017-10-01	63	51	0.13	0	0
2017-10-02	62	48	0.12	0	0
2017-10-03	69	48	0	0	0
2017-10-04	69	45	0	0	0
2017-10-05	73	45	0	0	0
2017-10-06	72	46	0	0	0
2017-10-07	63	53	0.01	0	0
2017-10-08	63	48	0.01	0	0
2017-10-09	65	44	0	0	0
2017-10-10	56	45	0.03	0	0
2017-10-11	57	45	0.24	0	0
2017-10-12	56	46	0.45	0	0
2017-10-13	55	42	0.09	0	0
2017-10-14	58	39	0	0	0
2017-10-15	66	42	0	0	0
2017-10-16	66	42	0	0	0
2017-10-17	57	45	0.02	0	0
2017-10-18	63	48	0.04	0	0
2017-10-19	59	49	1.19	0	0
2017-10-20	53	47	0.14	0	0
2017-10-21	59	45	1.61	0	0
2017-10-22	62	50	1.09	0	0
2017-10-23	63	47	0	0	0
2017-10-24	69	49	0	0	0
2017-10-25	64	46	0	0	0
2017-10-26	69	50	0	0	0
2017-10-27	72	49	0	0	0
2017-10-28	70	50	0	0	0
2017-10-29	56	41	0.02	0	0
2017-10-30	62	49	0	0	0
2017-10-31	62	40	0	0	0
Average Sun	63	46.3	5.19	0	0

Date	Max Temperature	Min Temperature	Precipitation	Snowfall	Snow Depth
2017-11-01	58	46	T	0	0
2017-11-02	54	44	0.2	0	0
2017-11-03	48	41	0.01	0	0
2017-11-04	49	40	0.07	0	0
2017-11-05	51	39	0.4	0	0
2017-11-06	49	39	0	0	0
2017-11-07	46	40	0	0	0
2017-11-08	46	42	0.4	0	0
2017-11-09	54	41	0.28	0	0
2017-11-10	49	43	0.51	0	0
2017-11-11	53	43	0.12	0	0
2017-11-12	55	47	0.18	0	0
2017-11-13	54	45	0.42	0	0
2017-11-14	56	45	0.04	0	0
2017-11-15	55	43	1.1	0	0
2017-11-16	47	42	0.29	0	0
2017-11-17	49	41	0.27	0	0
2017-11-18	52	38	T	0	0
2017-11-19	49	37	0.15	0	0
2017-11-20	55	45	0.96	0	0
2017-11-21	54	44	0.52	0	0
2017-11-22	62	51	0.32	0	0
2017-11-23	61	48	0.23	0	0
2017-11-24	55	43	0	0	0
2017-11-25	50	40	0.13	0	0
2017-11-26	56	45	0.73	0	0
2017-11-27	49	41	T	0	0
2017-11-28	45	43	0.44	0	0
2017-11-29	50	41	0	0	0
2017-11-30	45	39	0.13	0	0
Average Sun	51.9	42.5	7.9	0	0

Date	Max Temperature	Min Temperature	Precipitation	Snowfall	Snow Depth
2017-12-01	48		44	0.09 M	M
2017-12-02	48		42	0.45 M	M
2017-12-03	47		40	0.02 M	M
2017-12-04	44		37 T	M	M
2017-12-05	50		35	0 M	M
2017-12-06	52		40	0 M	M
2017-12-07	M	M	M	M	M
2017-12-08	M	M	M	M	M
2017-12-09	M	M	M	M	M
2017-12-10	M	M	M	M	M
2017-12-11	M	M	M	M	M
2017-12-12	M	M	M	M	M
2017-12-13	M	M	M	M	M
2017-12-14	M	M	M	M	M
2017-12-15	M	M	M	M	M
2017-12-16	M	M	M	M	M
2017-12-17	M	M	M	M	M
2017-12-18	M	M	M	M	M
2017-12-19	M	M	M	M	M
2017-12-20	M	M	M	M	M
2017-12-21	M	M	M	M	M
2017-12-22	M	M	M	M	M
2017-12-23	M	M	M	M	M
2017-12-24	M	M	M	M	M
2017-12-25	M	M	M	M	M
2017-12-26	M	M	M	M	M
2017-12-27	M	M	M	M	M
2017-12-28	M	M	M	M	M
2017-12-29	M	M	M	M	M
2017-12-30	M	M	M	M	M
2017-12-31	M	M	M	M	M
Average Sun	48.2		39.7	0.56 M	M

Normals -POR KGW

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.19	0.16	0.18	0.13	0.08	0.08	0.03	0.02	0.03	0.07	0.17	0.27
2	0.2	0.16	0.18	0.12	0.09	0.08	0.03	0.01	0.04	0.07	0.17	0.26
3	0.2	0.17	0.17	0.13	0.08	0.07	0.03	0.02	0.04	0.07	0.19	0.27
4	0.2	0.17	0.17	0.13	0.09	0.07	0.02	0.01	0.04	0.06	0.19	0.25
5	0.2	0.18	0.16	0.13	0.08	0.07	0.03	0.02	0.04	0.07	0.2	0.24
6	0.21	0.17	0.16	0.12	0.09	0.07	0.02	0.01	0.04	0.07	0.2	0.25
7	0.2	0.17	0.15	0.13	0.09	0.08	0.03	0.02	0.04	0.07	0.21	0.24
8	0.21	0.18	0.15	0.12	0.08	0.06	0.02	0.02	0.04	0.08	0.21	0.24
9	0.22	0.17	0.15	0.13	0.08	0.07	0.03	0.02	0.04	0.08	0.22	0.22
10	0.21	0.17	0.15	0.12	0.08	0.07	0.02	0.02	0.05	0.07	0.22	0.23
11	0.2	0.18	0.14	0.12	0.08	0.06	0.02	0.02	0.04	0.08	0.22	0.22
12	0.21	0.17	0.14	0.12	0.08	0.07	0.02	0.02	0.05	0.09	0.22	0.22
13	0.2	0.16	0.15	0.11	0.08	0.06	0.02	0.02	0.05	0.09	0.22	0.23
14	0.2	0.17	0.15	0.12	0.08	0.06	0.02	0.02	0.04	0.1	0.22	0.22
15	0.2	0.16	0.15	0.12	0.08	0.06	0.02	0.03	0.05	0.1	0.22	0.22
16	0.2	0.15	0.14	0.11	0.07	0.06	0.01	0.02	0.05	0.11	0.22	0.23
17	0.2	0.16	0.15	0.12	0.08	0.05	0.02	0.03	0.05	0.11	0.22	0.22
18	0.2	0.17	0.14	0.11	0.08	0.06	0.02	0.02	0.06	0.13	0.23	0.22
19	0.2	0.16	0.14	0.11	0.08	0.05	0.01	0.03	0.05	0.12	0.23	0.23
20	0.2	0.17	0.13	0.12	0.08	0.05	0.02	0.02	0.06	0.13	0.23	0.22
21	0.19	0.16	0.14	0.11	0.08	0.05	0.01	0.03	0.06	0.14	0.24	0.22
22	0.19	0.15	0.13	0.1	0.08	0.04	0.02	0.02	0.06	0.13	0.24	0.21
23	0.19	0.16	0.14	0.11	0.09	0.04	0.01	0.03	0.06	0.14	0.24	0.22
24	0.2	0.16	0.13	0.1	0.08	0.04	0.02	0.02	0.06	0.14	0.25	0.21
25	0.2	0.16	0.13	0.1	0.09	0.04	0.01	0.03	0.07	0.15	0.25	0.21
26	0.19	0.17	0.13	0.09	0.08	0.04	0.01	0.02	0.06	0.14	0.26	0.2
27	0.19	0.16	0.13	0.1	0.09	0.04	0.02	0.03	0.07	0.15	0.26	0.2
28	0.19	0.16	0.13	0.09	0.08	0.03	0.01	0.03	0.07	0.16	0.25	0.19
29	0.18	-	0.13	0.09	0.09	0.04	0.01	0.03	0.07	0.16	0.27	0.2
30	0.19	-	0.13	0.09	0.08	0.03	0.02	0.04	0.06	0.17	0.27	0.19
31	0.18	-	0.13	-	0.08	-	0.01	0.03	-	0.17	-	0.19

WETS Station: PORTLAND KGW-TV, OR

Requested years: 1971 - 2000

Month	Avg Max Temp	Avg Min Temp	Avg Mean Temp	Avg Precip	30% chance precip less than	30% chance precip more than	Avg number days precip 0.10 or more	Avg Snowfall
Jan	46.2	36.4	41.3	6.05	3.77	7.31	12	1.2
Feb	50.6	38.5	44.5	5.29	3.57	6.32	12	0.9
Mar	56.2	40.7	48.5	4.44	3.39	5.17	12	0.1
Apr	61.4	43.9	52.6	3.13	2.18	3.71	9	0
May	67.3	48.6	57.9	2.58	1.59	3.12	8	0
Jun	73.2	53.1	63.2	1.59	0.85	1.94	4	0
Jul	79.1	57	68.1	0.78	0.35	0.93	2	0
Aug	79.5	57.4	68.5	1.02	0.32	1.17	2	0
Sep	74.9	54.1	64.5	1.75	0.82	2.06	4	0
Oct	63.4	47.5	55.5	3.39	1.85	4.14	7	0
Nov	52.2	41.4	46.8	6.59	4.4	7.9	14	0.4
Dec	46.1	36.8	41.4	6.46	4.43	7.71	13	0.9
Annual:					38.24	48.02		
Average	62.5	46.3	54.4	-	-	-	-	-
Total	-	-	-	43.07			100	3.5

GROWING SEASON DATES

Years with missing data:	24 deg = 6	28 deg = 6	32 deg = 6
Years with no occurrence:	24 deg = 15	28 deg = 4	32 deg = 0
Data years used:	24 deg = 24	28 deg = 24	32 deg = 24
Probability	24 F or higher	28 F or higher	32 F or higher
50 percent *	No occurrence	1/30 to 12/24: 328 days	2/20 to 11/29: 282 days
70 percent *	No occurrence	1/19 to 1/4: 350 days	2/12 to 12/8: 299 days

* Percent chance of the growing season occurring between the Beginning and Ending dates.

APPENDIX C
Wetland Determination Data Sheets

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Harmony Road Townhomes City/County: - / Clackamas Sampling Date: 8/25/2016
 Applicant/Owner: Cascadia Planning & Dev. Svcs/Old Time Investments, Inc. State: OR Sampling Point: P1
 Investigator(s): C. Mirth Walker, Evan Dulin Section, Township, Range: 31D, T1S, R2E, TL 2200
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 1
 Subregion (LRR): A, Northwest Forests and Coast Lat: 45.432065 Long: -122.600305 Datum: NAD 1983
 Soil Map Unit Name: Wapato silty clay loam (84) NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>	
Precipitation prior to fieldwork: <u>No rainfall 2 weeks prior, 6.41" above normal for WYTD, 2.06" below normal for CYTD.</u>			
Remarks:			

VEGETATION

Tree Stratum (Plot size: <u>30' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Fraxinus latifolia</u>	<u>30%</u>	<u>Yes</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>80%</u> (A/B)
2. <u>Alnus rubra</u>	<u>10%</u>	<u>Yes</u>	<u>FAC</u>	
3. <u>Salix lasiandra</u>	<u>10%</u>	<u>Yes</u>	<u>FACW</u>	
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
<u>50%</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>10' r</u>)				
1. <u>Rubus armeniacus</u>	<u>80%</u>	<u>Yes</u>	<u>FAC</u>	Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>40</u> x 2 = <u>80</u> FAC species <u>93</u> x 3 = <u>279</u> FACU species <u>95</u> x 4 = <u>380</u> UPL species <u>10</u> x 5 = <u>50</u> Column Totals: <u>238</u> (A) <u>789</u> (B) Prevalence Index = B/A = <u>3.32</u>
2. <u>Prunus laurocerasus</u>	<u>10%</u>	<u>No</u>	<u>NOL</u>	
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
<u>90%</u> = Total Cover				
Herb Stratum (Plot size: <u>5' r</u>)				
1. <u>Hedera helix</u>	<u>95%</u>	<u>Yes</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> <u>2</u> - Dominance Test is >50% <u> </u> <u>3</u> - Prevalence Index is ≤3.0 ¹ <u> </u> <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> <u>5</u> - Wetland Non-Vascular Plants ¹ <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present. Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>
2. <u>Ranunculus repens</u>	<u>3%</u>	<u>No</u>	<u>FAC</u>	
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
6. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
7. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
8. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
9. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
10. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
11. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
<u>98%</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>10' r</u>)				
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>	Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
<u>0%</u> = Total Cover				
% Bare Ground in Herb Stratum <u>2%</u>				

Remarks: Trees are narrow diameter at breast height: Oregon ash is 10", alder 7", willow 5". Entered by: NED QC by: cmw

SOIL

Sampling Point: **P1**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR 3/2	100					SiL	
2-7+	10YR 3/2	96	7.5YR 3/3	4	C	M	SiL	faint redox

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)		³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)		

Restrictive Layer (if present):	
Type: <u>None</u>	
Depth (inches): <u>N/A</u>	
	Hydric Soil Present? Yes <u> </u> No <u>X</u>

Remarks: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)
Shovel refusal at 7" from large buried rock.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Frost-Heave Hummocks (D7)

Field Observations:	
Surface Water Present? Yes <u> </u> No <u>X</u>	Depth (inches): <u>N/A</u>
Water Table Present? Yes <u> </u> No <u>X</u>	Depth (inches): <u>>7</u>
Saturation Present? Yes <u> </u> No <u>X</u>	Depth (inches): <u>>7</u>
(includes capillary fringe)	
	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No indicators of hydrology. Entered by: NED QC by: cmw

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Harmony Road Townhomes City/County: - / Clackamas Sampling Date: 8/25/2016
 Applicant/Owner: Cascadia Planning & Dev. Svcs/Old Time Investments, Inc. State: OR Sampling Point: P2
 Investigator(s): C. Mirth Walker, Evan Dulin Section, Township, Range: 31D, T1S, R2E, TL 2200
 Landform (hillslope, terrace, etc.): Stream floodplain Local relief (concave, convex, none): Concave Slope (%): <2
 Subregion (LRR): A, Northwest Forests and Coast Lat: 45.432050 Long: -122.600420 Datum: NAD 1983
 Soil Map Unit Name: Wapato silty clay loam (84) NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u> </u>	No <u>X</u>	Is the Sampled Area within a Wetland? Water Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>	
Wetland Hydrology Present?	Yes <u>X</u>	No <u> </u>	
Precipitation prior to fieldwork: <u>No rainfall 2 weeks prior, 6.41" above normal for WYTD, 2.06" below normal for CYTD.</u>			
Remarks: Sample plot was taken below the OHWM of Minthorn Creek. Area is considered a water and not a wetland.			

VEGETATION

Tree Stratum (Plot size: <u>30' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
<u>0%</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>10' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>3</u> x 3 = <u>9</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>95</u> x 5 = <u>475</u> Column Totals: <u>98</u> (A) <u>484</u> (B) Prevalence Index = B/A = <u>4.94</u>
1. <u>Prunus laurocerasus</u>	<u>95%</u>	<u>Yes</u>	<u>NOL</u>	
2. <u>Rubus armeniacus</u>	<u>3%</u>	<u>No</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>98%</u> = Total Cover				
Herb Stratum (Plot size: <u>5' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ¹ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants ¹ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>0%</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>10' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
<u>0%</u> = Total Cover				
% Bare Ground in Herb Stratum <u>100%</u>				

Remarks: _____ Entered by: NED QC by: cmw
Prunus laurocerasus is rooted upslope of floodplain area but shades the floodplain area. *Rubus armeniacus* is rooted at the OHWM boundary.

SOIL

Sampling Point: **P2**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-9	10YR 3/1	100					SiL	pebbly
9-15+	10YR 3/1	67	7.5YR 4/4	3	C	M	SiL	pebbly, ~mucky
			10YR 3/2	30	C	M	SiL	pebbly, faint redox
@25	2.5Y 3/1	90	10YR 3/2	10	C	M	SiL	faint redox

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)		³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)		

Restrictive Layer (if present):	
Type: <u>None</u>	
Depth (inches): <u>N/A</u>	
	Hydric Soil Present? Yes <u> </u> No <u>X</u>

Remarks: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)
 Rounded and broken rocks up to 3" diameter with organics in soil profile. Soil was moist. Probed below 15 inches.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input checked="" type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Frost-Heave Hummocks (D7)

Field Observations:	
Surface Water Present? Yes <u> </u> No <u>X</u>	Depth (inches): <u>N/A</u>
Water Table Present? Yes <u> </u> No <u>X</u>	Depth (inches): <u>>15</u>
Saturation Present? (includes capillary fringe) Yes <u>X</u> No <u> </u>	Depth (inches): <u>25</u>
	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Sediments on tires along OHWM boundary. Entered by: NED QC by: cmw

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Harmony Road Townhomes City/County: - / Clackamas Sampling Date: 8/25/2016
 Applicant/Owner: Cascadia Planning & Dev. Svcs/Old Time Investments, Inc. State: OR Sampling Point: P3
 Investigator(s): C. Mirth Walker, Evan Dulin Section, Township, Range: 31D, T1S, R2E, TL 2200
 Landform (hillslope, terrace, etc.): Toeslope Local relief (concave, convex, none): Convex Slope (%): 3
 Subregion (LRR): A, Northwest Forests and Coast Lat: 45.432019 Long: -122.600394 Datum: NAD 1983
 Soil Map Unit Name: Wapato silty clay loam (84) NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u> </u>	No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>	
Precipitation prior to fieldwork: <u>No rainfall 2 weeks prior, 6.41" above normal for WYTD, 2.06" below normal for CYTD.</u>			
Remarks: <u>Sample plot located about 8' SE of P2.</u>			

VEGETATION

Tree Stratum (Plot size: <u>30' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status		
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B)	
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
<u>0%</u> = Total Cover				Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>5</u> x 3 = <u>15</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>95</u> x 5 = <u>475</u> Column Totals: <u>100</u> (A) <u>490</u> (B) Prevalence Index = B/A = <u>4.90</u>	
Sapling/Shrub Stratum (Plot size: <u>10' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status		
1. <u>Prunus laurocerasus</u>	<u>95%</u>	<u>Yes</u>	<u>NOL</u>		
2. <u>Rubus armeniacus</u>	<u>5%</u>	<u>No</u>	<u>FAC</u>		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
<u>100%</u> = Total Cover				Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u> </u> 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> 5 - Wetland Non-Vascular Plants ¹ <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present. Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>	
Herb Stratum (Plot size: <u>5' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status		
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
<u>0%</u> = Total Cover				Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>	
Woody Vine Stratum (Plot size: <u>10' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status		
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
<u>0%</u> = Total Cover				Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>	
% Bare Ground in Herb Stratum <u>100%</u>					
Remarks: _____ Entered by: <u>NED</u> QC by: <u>cmw</u>					

SOIL

Sampling Point: **P3**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10+	10YR 3/2	100					SiL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	³ Indicators of hydrophytic vegetation and
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	wetland hydrology must be present,
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	unless disturbed or problematic.

Restrictive Layer (if present):

Type: None

Depth (inches): N/A

Hydric Soil Present? Yes _____ No X

Remarks: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)
Shovel refusal at 10" from buried rocks.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:

Surface Water Present?	Yes _____ No <u>X</u>	Depth (inches): <u>N/A</u>	Wetland Hydrology Present? Yes _____ No <u>X</u>
Water Table Present?	Yes _____ No <u>X</u>	Depth (inches): <u>>10</u>	
Saturation Present?	Yes _____ No <u>X</u>	Depth (inches): <u>>10</u>	
(includes capillary fringe)			

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: _____ Entered by: NED QC by: cmw

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Harmony Road Townhomes City/County: - / Clackamas Sampling Date: 8/25/2016
 Applicant/Owner: Cascadia Planning & Dev. Svcs/Old Time Investments, Inc. State: OR Sampling Point: P4
 Investigator(s): C. Mirth Walker, Evan Dulin Section, Township, Range: 31D, T1S, R2E, TL 2200
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): <2
 Subregion (LRR): A, Northwest Forests and Coast Lat: 45.432292 Long: -122.600752 Datum: NAD 1983
 Soil Map Unit Name: Wapato silty clay loam (84) NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u>X</u>	No <u> </u>	
Wetland Hydrology Present?	Yes <u>X</u>	No <u> </u>	
Precipitation prior to fieldwork: <u>No rainfall 2 weeks prior, 6.41" above normal for WYTD, 2.06" below normal for CYTD.</u>			
Remarks: <u>Sample plot located on north side of stream.</u>			

VEGETATION

Tree Stratum (Plot size: <u>30' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Fraxinus latifolia</u>	<u>70%</u>	<u>Yes</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B)
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
<u>70%</u> = Total Cover				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B) Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>103</u> x 2 = <u>206</u> FAC species <u>90</u> x 3 = <u>270</u> FACU species <u>3</u> x 4 = <u>12</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>196</u> (A) <u>488</u> (B) Prevalence Index = B/A = <u>2.49</u>
Sapling/Shrub Stratum (Plot size: <u>10' r</u>)				
1. <u>Fraxinus latifolia</u>	<u>10%</u>	<u>Yes</u>	<u>FACW</u>	
2. <u>Cornus alba</u>	<u>10%</u>	<u>Yes</u>	<u>FACW</u>	
3. <u>Crataegus monogyna</u>	<u>5%</u>	<u>No</u>	<u>FAC</u>	
4. <u>Rubus armeniacus</u>	<u>5%</u>	<u>No</u>	<u>FAC</u>	
5. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
<u>30%</u> = Total Cover				
Herb Stratum (Plot size: <u>5' r</u>)				
1. <u>Agrostis capillaris</u>	<u>50%</u>	<u>Yes</u>	<u>FAC</u>	
2. <u>Carex leptopoda</u>	<u>20%</u>	<u>Yes</u>	<u>FAC</u>	
3. <u>Equisetum arvense</u>	<u>10%</u>	<u>No</u>	<u>FAC</u>	
4. <u>Mentha arvensis</u>	<u>10%</u>	<u>No</u>	<u>FACW</u>	
5. <u>Bidens frondosa</u>	<u>3%</u>	<u>No</u>	<u>FACW</u>	
6. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
7. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
8. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
9. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
10. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
11. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
<u>93%</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>10' r</u>)				
1. <u>Rubus leucodermis</u>	<u>3%</u>	<u>No</u>	<u>FACU</u>	
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
<u>3%</u> = Total Cover				
% Bare Ground in Herb Stratum <u>7%</u>				
Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation X 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ¹ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants ¹ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present.				
Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>				

Remarks: Lysichiton americanus and Iris pseudacorus (both OBL) also occur nearby in the wetland area. Entered by: NED QC by: cmw

SOIL

Sampling Point: **P4**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 2/2	100					SiL	
4-12	10YR 3/1	90	5YR 3/4	10	C	M, PL	SiL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)		³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)		

Restrictive Layer (if present):	
Type: <u>None</u>	
Depth (inches): <u>N/A</u>	
	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

Remarks: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)
Shovel refusal at 12" from large living roots.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Drift Deposits (B3)	<input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Frost-Heave Hummocks (D7)

Field Observations:	
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>X</u>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>>12</u>	
Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>>12</u>	
(includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Entered by: NED QC by: cmw

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Harmony Road Townhomes City/County: - / Clackamas Sampling Date: 8/25/2016
 Applicant/Owner: Cascadia Planning & Dev. Svcs/Old Time Investments, Inc. State: OR Sampling Point: P5
 Investigator(s): C. Mirth Walker, Evan Dulin Section, Township, Range: 31D, T1S, R2E, TL 2200
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Convex Slope (%): <2
 Subregion (LRR): A, Northwest Forests and Coast Lat: 45.432317 Long: -122.600797 Datum: NAD 1983
 Soil Map Unit Name: Wapato silty clay loam (84) NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u> </u>	No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>	
Precipitation prior to fieldwork: <u>No rainfall 2 weeks prior, 6.41" above normal for WYTD, 2.06" below normal for CYTD.</u>			
Remarks: <u>Sample plot is located about 15' North of P4.</u>			

VEGETATION

Tree Stratum (Plot size: <u>30' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Populus balsamifera</u>	<u>30%</u>	<u>Yes</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50%</u> (A/B)
2. <u>Thuja plicata</u>	<u>10%</u>	<u>Yes</u>	<u>FAC</u>	
3. <u>Abies grandis</u>	<u>5%</u>	<u>No</u>	<u>FACU</u>	
4. <u>Fraxinus latifolia</u>	<u>5%</u>	<u>No</u>	<u>FACW</u>	
<u>50%</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>10' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Crataegus monogyna</u>	<u>30%</u>	<u>Yes</u>	<u>FAC</u>	Prevalence Index worksheet: <u> </u> Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>5</u> x 2 = <u>10</u> FAC species <u>70</u> x 3 = <u>210</u> FACU species <u>110</u> x 4 = <u>440</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>185</u> (A) <u>660</u> (B) Prevalence Index = B/A = <u>3.57</u>
2. <u>Ilex aquifolium</u>	<u>10%</u>	<u>Yes</u>	<u>FACU</u>	
3. <u>Prunus caroliniana</u>	<u>5%</u>	<u>No</u>	<u>FACU</u>	
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
<u>45%</u> = Total Cover				
Herb Stratum (Plot size: <u>5' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Hedera helix</u>	<u>80%</u>	<u>Yes</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u> </u> 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> 5 - Wetland Non-Vascular Plants ¹ <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present. Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>
2. <u>Polystichum munitum</u>	<u>5%</u>	<u>No</u>	<u>FACU</u>	
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
6. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
7. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
8. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
9. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
10. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
11. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
<u>85%</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>10' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Rubus leucodermis</u>	<u>5%</u>	<u>Yes</u>	<u>FACU</u>	
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
<u>5%</u> = Total Cover				
% Bare Ground in Herb Stratum <u>15%</u>				
Remarks: <u>Fraxinus latifolia is rooted at boundary overhanging the sample plot.</u>				Entered by: <u>NED</u> QC by: <u>cmw</u>

SOIL

Sampling Point: **P5**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR 3/1	100					SiL	
3-9+	10YR 3/1	99	10YR 3/2	1	C	M	SiL	faint redox

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	³ Indicators of hydrophytic vegetation and
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	wetland hydrology must be present,
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	unless disturbed or problematic.

Restrictive Layer (if present):

Type: None

Depth (inches): N/A

Hydric Soil Present? Yes No

Remarks: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <u>N/A</u>	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <u>>9</u>	
Saturation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <u>>9</u>	
(includes capillary fringe)			

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Entered by: NED QC by: cmw

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Harmony Road Townhomes City/County: Milwaukie / Clackamas Sampling Date: 10/17/2017
 Applicant/Owner: Cascadia Planning & Dev. Svcs/Old Time Investments, Inc. State: OR Sampling Point: P6
 Investigator(s): C. Mirth Walker, Tom Dee Section, Township, Range: 31D, T1S, R2E, TL 2200
 Landform (hillslope, terrace, etc.): Floodplain bench Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR): A, Northwest Forests and Coast Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Wapato silty clay loam (84) NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No <u>X</u>	Is the Sampled Area within a Wetland? Water Yes _____ No <u>X</u>
Hydric Soil Present?	Yes <u>X</u>	No _____	
Wetland Hydrology Present?	Yes <u>X</u>	No _____	
Precipitation prior to fieldwork: Remarks: <u>Below OHWM of Minthorn Creek; 2 feet downslope of P2</u>			

VEGETATION

Tree Stratum (Plot size: <u>30' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50%</u> (A/B)
1. <u>Salix lasiandra</u>	<u>10%</u>	<u>Yes</u>	<u>FACW</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
<u>10%</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>10' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>10</u> x 2 = <u>20</u> FAC species <u>10</u> x 3 = <u>30</u> FACU species <u>5</u> x 4 = <u>20</u> UPL species <u>40</u> x 5 = <u>200</u> Column Totals: <u>65</u> (A) <u>270</u> (B) Prevalence Index = B/A = <u>4.15</u>
1. <u>Prunus laurocerasus</u>	<u>40%</u>	<u>Yes</u>	<u>NOL</u>	
2. <u>Rubus armeniacus</u>	<u>5%</u>	<u>No</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>45%</u> = Total Cover				
Herb Stratum (Plot size: <u>5' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ¹ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants ¹ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present.
1. <u>Galium aparine</u>	<u>5%</u>	<u>Yes</u>	<u>FACU</u>	
2. <u>Solanum dulcamara</u>	<u>5%</u>	<u>Yes</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>10%</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>10' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
<u>0%</u> = Total Cover				
% Bare Ground in Herb Stratum <u>90%</u>				
Remarks: _____ Entered by: <u>KL</u> QC by: <u>cmw</u>				

SOIL

Sampling Point: **P6**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-5	10YR 3/1	100					SiCL	w/ rounded gravel
5-11	10YR 4/1	85	10YR 5/8	10	C	M	SiCL	w/ rounded gravel
			2.5YR 4/8	5	C	M		
11-20	10YR 4/1	100					SiCL	w/ rounded gravel

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)		³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)		

Restrictive Layer (if present):	
Type: <u>None</u>	
Depth (inches): <u>N/A</u>	
	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

Remarks: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Frost-Heave Hummocks (D7)

Field Observations:	
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u> </u>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u> </u>	
Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>12</u>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Glistering peds at 12"; moist to surface. Laurel rooted upslope of depression. Entered by: KL QC by: cmw

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Harmony Road Townhomes City/County: Milwaukie / Clackamas Sampling Date: 10/17/2017
 Applicant/Owner: Cascadia Planning & Dev. Svcs/Old Time Investments, Inc. State: OR Sampling Point: P7
 Investigator(s): C. Mirth Walker, Tom Dee Section, Township, Range: 31D, T1S, R2E, TL 2200
 Landform (hillslope, terrace, etc.): Toeslope Local relief (concave, convex, none): convex Slope (%): 2
 Subregion (LRR): A, Northwest Forests and Coast Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Wapato silty clay loam (84) NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No <u>X</u>	Is the Sampled Area within a Wetland?		
Hydric Soil Present?	Yes _____	No <u>X</u>		Water	
Wetland Hydrology Present?	Yes _____	No <u>X</u>		Yes _____	No <u>X</u>
Precipitation prior to fieldwork: Remarks: Upslope of P6 to West.					

VEGETATION

Tree Stratum (Plot size: <u>30' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. <u>Alnus rubra</u>	<u>10%</u>	Yes	FAC	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)	
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>5</u> (B)	
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>40%</u> (A/B)	
4. _____	_____	_____	_____	Prevalence Index worksheet:	
<u>10%</u> = Total Cover				Total % Cover of: _____ Multiply by: _____	
Sapling/Shrub Stratum (Plot size: <u>10' r</u>)				OBL species <u>0</u> x 1 = <u>0</u>	
1. <u>Prunus laurocerasus</u>	<u>40%</u>	Yes	NOL	FACW species <u>0</u> x 2 = <u>0</u>	
2. <u>Rubus armeniacus</u>	<u>10%</u>	Yes	FAC	FAC species <u>20</u> x 3 = <u>60</u>	
3. _____	_____	_____	_____	FACU species <u>20</u> x 4 = <u>80</u>	
4. _____	_____	_____	_____	UPL species <u>40</u> x 5 = <u>200</u>	
5. _____	_____	_____	_____	Column Totals: <u>80</u> (A) <u>340</u> (B)	
<u>50%</u> = Total Cover				Prevalence Index = B/A = <u>4.25</u>	
Herb Stratum (Plot size: <u>5' r</u>)				Hydrophytic Vegetation Indicators:	
1. <u>Hedera helix</u>	<u>15%</u>	Yes	FACU	1 - Rapid Test for Hydrophytic Vegetation	
2. <u>Polystichum munitum</u>	<u>5%</u>	Yes	FACU	2 - Dominance Test is >50%	
3. _____	_____	_____	_____	3 - Prevalence Index is ≤3.0 ¹	
4. _____	_____	_____	_____	4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
5. _____	_____	_____	_____	5 - Wetland Non-Vascular Plants ¹	
6. _____	_____	_____	_____	Problematic Hydrophytic Vegetation ¹ (Explain)	
7. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present.	
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
<u>20%</u> = Total Cover				Hydrophytic Vegetation Present? Yes _____ No <u>X</u>	
Woody Vine Stratum (Plot size: <u>10' r</u>)					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
<u>0%</u> = Total Cover					
% Bare Ground in Herb Stratum <u>80%</u>					
Remarks: _____ Entered by: <u>KL</u> QC by: <u>cmw</u>					

SOIL

Sampling Point: **P7**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-11	10YR 4/2	100					SiL	w/ 5" rounded river rock
11-18	10YR 5/3	100					SiL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

Restrictive Layer (if present):

Type: None

Depth (inches): N/A

Hydric Soil Present? Yes No

Remarks: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <u> </u>	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <u> </u>	
Saturation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <u> </u>	
(includes capillary fringe)			

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Entered by: KL QC by: cmw

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Harmony Road Townhomes City/County: Milwaukie / Clackamas Sampling Date: 12/5/2017
 Applicant/Owner: Cascadia Planning & Dev. Svcs/Old Time Investments, Inc. State: OR Sampling Point: P8
 Investigator(s): C. Mirth Walker, Tom Dee Section, Township, Range: 31D, T1S, R2E, TL 2200
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 3
 Subregion (LRR): A, Northwest Forests and Coast Lat: _____ Long: _____ Datum: NAD 1983
 Soil Map Unit Name: Wapato silty clay loam (84) NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present?	Yes <u>X</u>	No _____	
Wetland Hydrology Present?	Yes _____	No <u>X</u>	
Precipitation prior to fieldwork: <u>3.48 inches 2 weeks prior (Portland); 1.94" above normal WYTD; 11.73" above normal CYTD.</u>			
Remarks: <u>Central north sewer easement.</u>			

VEGETATION

Tree Stratum (Plot size: <u>30' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Populus balsamifera</u>	<u>60%</u>	<u>Yes</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50%</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
<u>60%</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>10' r</u>)				
1. <u>Fraxinus latifolia</u>	<u>20%</u>	<u>Yes</u>	<u>FACW</u>	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>25</u> x 2 = <u>50</u> FAC species <u>71</u> x 3 = <u>213</u> FACU species <u>104</u> x 4 = <u>416</u> UPL species <u>10</u> x 5 = <u>50</u> Column Totals: <u>210</u> (A) <u>729</u> (B) Prevalence Index = B/A = <u>3.47</u>
2. <u>Prunus laurocerasus</u>	<u>10%</u>	<u>Yes</u>	<u>NOL</u>	
3. <u>Crataegus monogyna</u>	<u>5%</u>	<u>No</u>	<u>FAC</u>	
4. <u>Corylus cornuta</u>	<u>2%</u>	<u>No</u>	<u>FACU</u>	
5. <u>Ilex aquifolium</u>	<u>2%</u>	<u>No</u>	<u>FACU</u>	
<u>39%</u> = Total Cover + 2 = 41%				
Herb Stratum (Plot size: <u>5' r</u>)				
1. <u>Hedera helix</u>	<u>95%</u>	<u>Yes</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ¹ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants ¹ _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present.
2. <u>Polypogon monspeliensis</u>	<u>5%</u>	<u>No</u>	<u>FACW</u>	
3. <u>Equisetum arvense</u>	<u>1%</u>	<u>No</u>	<u>FAC</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>101%</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>10' r</u>)				
1. <u>Rubus ursinus</u>	<u>5%</u>	<u>Yes</u>	<u>FACU</u>	Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
2. <u>Rubus armeniacus</u>	<u>5%</u>	<u>Yes</u>	<u>FAC</u>	
<u>10%</u> = Total Cover				
% Bare Ground in Herb Stratum <u>0%</u>				
Remarks: Sapling/Shrub Stratum also has 1% each <i>Thuja plicata</i> (FAC) and <i>Cornus alba</i> (FACW)				Entered by: <u>KL</u> QC by: <u>cmw</u>

SOIL

Sampling Point: **P8**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 3/2	100					SiL	
4-14+	10YR 4/1	98	10YR 4/6	2	C	M	gr SiL	and rounded cobbles

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)			Indicators for Problematic Hydric Soils ³ :		
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)			
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)			
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)			
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)			
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.			
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)				
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)				
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)				

Restrictive Layer (if present):	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Type: <u>None</u>	
Depth (inches): <u>N/A</u>	

Remarks: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Frost-Heave Hummocks (D7)

Field Observations:	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Moist throughout. Entered by: KL QC by: cmw

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Harmony Road Townhomes City/County: Milwaukie / Clackamas Sampling Date: 12/5/2017
 Applicant/Owner: Cascadia Planning & Dev. Svcs/Old Time Investments, Inc. State: OR Sampling Point: P9
 Investigator(s): C. Mirth Walker, Tom Dee Section, Township, Range: 31D, T1S, R2E, TL 2200
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 2
 Subregion (LRR): A, Northwest Forests and Coast Lat: _____ Long: _____ Datum: NAD 1983
 Soil Map Unit Name: Wapato silty clay loam (84) NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>	
Wetland Hydrology Present?	Yes <u>X</u>	No _____	
Precipitation prior to fieldwork: <u>3.48 inches 2 weeks prior (Portland); 1.94" above normal WYTD; 11.73" above normal CYTD.</u>			
Remarks: <u>NE corner of site.</u>			

VEGETATION

Tree Stratum (Plot size: <u>30' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Populus balsamifera</u>	<u>70%</u>	Yes	FAC	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50%</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
<u>70%</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>10' r</u>)				
1. <u>Symphoricarpos albus</u>	<u>20%</u>	Yes	FACU	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>15</u> x 2 = <u>30</u> FAC species <u>89</u> x 3 = <u>267</u> FACU species <u>120</u> x 4 = <u>480</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>224</u> (A) <u>777</u> (B) Prevalence Index = B/A = <u>3.47</u>
2. <u>Crataegus monogyna</u>	<u>10%</u>	Yes	FAC	
3. <u>Physocarpus capitatus</u>	<u>5%</u>	No	FACW	
4. <u>Fraxinus latifolia</u>	<u>5%</u>	No	FACW	
5. <u>Thuja plicata</u>	<u>4%</u>	No	FAC	
<u>44%</u> = Total Cover + 1 = 45%				
Herb Stratum (Plot size: <u>5' r</u>)				
1. <u>Hedera helix</u>	<u>95%</u>	Yes	FACU	Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ¹ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants ¹ _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present.
2. <u>Juncus patens</u>	<u>5%</u>	No	FACW	
3. <u>Equisetum arvense</u>	<u>5%</u>	No	FAC	
4. <u>Polystichum munitum</u>	<u>5%</u>	No	FACU	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>110%</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>10' r</u>)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
2. _____	_____	_____	_____	
<u>0%</u> = Total Cover				
% Bare Ground in Herb Stratum <u>0%</u>				
Remarks: <u>Ilex aquifolium 1% FACU in S/S Stratum.</u>				Entered by: <u>KL</u> QC by: <u>cmw</u>

SOIL

Sampling Point: **P9**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	10YR 4/1	99	10YR 4/6	1	C	M	SiL	Rounded cobbles

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)		
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)		

Restrictive Layer (if present): Type: <u>Rock refusal</u> Depth (inches): <u>12</u>	Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
--	---

Remarks: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)
 Tiny shard of broken glass in pit. Very rocky.

HYDROLOGY

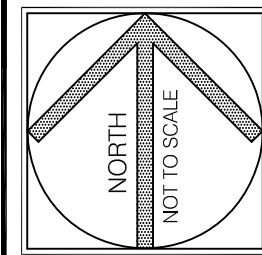
Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	Secondary Indicators (2 or more required) <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) <input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) <input type="checkbox"/> Frost-Heave Hummocks (D7)

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u> </u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>6</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
--	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Entered by: KL QC by: cmw
 Winter High Water Table; dam/weir on Minthorn Creek may back-up water into soil. Very slight small depression, not a linear feature, no geomorphic position.

APPENDIX D
Ground-level Site Photographs



CITY OF MILWAUKIE LAND USE APPLICATION
HARMONY PARK TOWNHOMES PH II
 6115 SE HARMONY ROAD
 MILWAUKIE, OR 97222
 TAX LOT 2200 TAX MAP 1S2E31D
 CLACKAMAS COUNTY, OREGON

AERIAL PHOTOGRAPH
 DECEMBER 18, 2017

REVISIONS
 △
 △
 △

SWCA ENVIRONMENTAL CONSULTANTS
 PHOTO LOCATION MAP



Photo 1. View north of western portion of riparian corridor. Photo date October 17, 2017.



Photo 2. View north of central portion of riparian corridor. Photo date October 17, 2017.



Photo 3. View north of eastern portion of riparian corridor. Photo date October 17, 2017.



Photo 4. View east of lot. Photo date October 17, 2017.



Photo 5. View northwest of manhole. Photo date August 25, 2016.



Photo 6. View west of typical condition riparian corridor. Photo date October 17, 2017.



Photo 7. View north of Plot 6, below ordinary high water line of Minthorn Creek. Photo date October 17, 2017.



Photo 8. View northeast of Minthorn Creek from eastern property line. Photo date October 17, 2017.



Photo 9. View west of Minthorn Creek. Photo date August 25, 2016.



Photo 10. View east of Minthorn Creek. Photo date August 25, 2016.



Photo 11. View east of Wetland A and northern bank of Minthorn Creek. Photo date August 25, 2016.



Photo 12. View north of northern wetland boundary. Photo date August 25, 2016.



Photo 13. View east near Plot 2. Photo date August 25, 2016.



Photo 14. Plot 2. Photo date August 25, 2016.

APPENDIX E
Vegetation List

**6115 SE Harmony Road
Site Vegetation List
August 25, 2016, and October 17 and December 5, 2017**

Common Name	Scientific Name	Wetland Indicator Status	Native and Invasive, Noxious
NATIVE			
grand fir	<i>Abies grandis</i>	FACU	native
big-leaf maple	<i>Acer macrophyllum</i>	FACU	native
red alder	<i>Alnus rubra</i>	FAC	native
devil's-pitchfork	<i>Bidens frondosa</i>	FACW	native
taper-fruit short-scale sedge	<i>Carex leptopoda</i>	FAC	native
red osier dogwood	<i>Cornus alba</i>	FACW	native
beaked hazelnut	<i>Corylus cornuta</i>	FACU	native
field horsetail	<i>Equisetum arvense</i>	FAC	native
Oregon ash	<i>Fraxinus latifolia</i>	FACW	native
sticky-willy	<i>Galium aparine</i>	FACU	native
lamp rush	<i>Juncus effusus</i>	FACW	native
spreading rush	<i>Juncus patens</i>	FACW	native
yellow-skunk-cabbage	<i>Lysichiton americanus</i>	OBL	native
American wild mint	<i>Mentha arvensis</i>	FACW	native
Pacific ninebark	<i>Physocarpus capitatus</i>	FACW	native
western or pineland sword fern	<i>Polystichum munitum</i>	FACU	native
balsam poplar (black cottonwood)	<i>Populus balsamifera</i>	FAC	native
Oregon white oak	<i>Quercus garryana</i>	FACU	native
white-stem raspberry	<i>Rubus leucodermis</i>	FACU	native
California dewberry	<i>Rubus ursinus</i>	FACU	native
Pacific willow	<i>Salix lasiandra</i>	FACW	native
giant sequoia	<i>Sequoiadendron giganteum</i>	NOL	native (to California)
common snowberry	<i>Symphoricarpos albus</i>	FACU	native
western arborvitae (western red cedar)	<i>Thuja plicata</i>	FAC	native
squashberry	<i>Viburnum edule</i>	FACW	native
NON-NATIVE			
horse chestnut*	<i>unknown species</i>	unknown species	unknown species
colonial bent	<i>Agrostis capillaris</i>	FAC	non-native
English hawthorn*	<i>Crataegus monogyna</i>	FAC	non-native
English ivy*	<i>Hedera helix</i>	FACU	invasive, noxious
English holly*	<i>Ilex aquifolium</i>	FACU	non-native
spotted touch-me-not	<i>Impatiens capensis</i>	FACW	non-native
pale-yellow iris (yellow flag)*	<i>Iris pseudacorus</i>	OBL	noxious
European privet*	<i>Ligustrum vulgare</i>	FACU	non-native
perennial rye grass	<i>Lolium perenne</i>	FAC	non-native
dawn redwood	<i>Metasequoia glyptostroboides</i>	NOL	non-native
Portuguese laurel*	<i>Prunus lusitanica</i>	NOL	non-native
English laurel*	<i>Prunus laurocerasus</i>	NOL	non-native
creeping buttercup	<i>Ranunculus repens</i>	FAC	non-native
Himalayan blackberry*	<i>Rubus armeniacus</i>	FAC	invasive, noxious
thornless blackberry	<i>Rubus species</i>	-	non-native
climbing (bittersweet) nightshade*	<i>Solanum dulcamara</i>	FAC	invasive
NATIVE STATUS UNKNOWN			
knotweed or smartweed	<i>Polygonum species</i>	OBL to NOL	-
rose	<i>Rosa species</i>	FAC to UPL	-

*Priority target non-native species for removal; all are on the City of Portland Nuisance Plant List.

Wetland Indicator Status and taxonomy for the Western Mountains, Valleys, and Coast Region per the National Wetland Plant List 2016 v3.3.

Accessed May 3, 2016.

<http://rsgisias.crrel.usace.army.mil/NWPL/>

Portland Plant List. Available at:

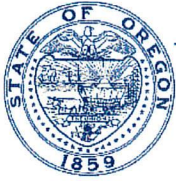
<https://www.portlandoregon.gov/citycode/article/322280>

Accessed September 22, 2016 and November 7, 2017

WETLAND INDICATOR STATUS (WIS)	
OBL	Obligate Wetland Plant - Almost always occurs in wetlands (hydrophyte), rarely in uplands
FACW	Facultative Wetland Plant - Usually occur in wetlands (hydrophyte), but may occur found in non-wetlands
FAC	Facultative Plant - Occurs in wetlands (hydrophyte) and uplands (nonhydrophyte)
FACU	Facultative Upland Plant - Usually occur in non-wetlands (non-hydrophyte), but may occur in wetlands
UPL	Upland Plant - Almost always occurs in uplands (non-hydrophyte), almost never occurs in wetlands. UPL plants have a WIS in other regions
NOL	Not Listed - Plants that are not on the National Wetland Plant List are assumed to be UPL and have no WIS in any region

**DEPARTMENT OF STATE LANDS WETLAND
DELINEATION CONCURRENCE LETTER**

EXHIBIT 7



Oregon

Kate Brown, Governor

Department of State Lands

775 Summer Street NE, Suite 100

Salem, OR 97301-1279

(503) 986-5200

FAX (503) 378-4844

www.oregon.gov/dsl

State Land Board

Kate Brown

Governor

Dennis Richardson

Secretary of State

Tobias Read

State Treasurer

March 27, 2018

Old Time Investments, Inc.
Attn: Ed Williams
16479 SE Oak Meadow Court
Damascus, OR 97089

Re: WD # 2017-0559 Wetland Delineation Report for the Proposed
Harmony Road Townhomes, Clackamas County;
T 1S R 2E S 31D Tax Lot 2200
North Urban Area Local Wetlands Inventory, Minthorn Creek

Dear Mr. Williams:

The Department of State Lands has reviewed the wetland delineation report prepared by SWCA Environmental Consultants for the site referenced above. Based upon the information presented in the report and additional information submitted upon request, we concur with the wetland and waterway boundaries as mapped in Figure 8 of the report. Within the study area, one wetland (totaling approximately 0.12 acres) and a segment of Minthorn Creek were identified.

The wetland and creek are subject to the permit requirements of the state Removal-Fill Law. Under current regulations, a state permit is required for cumulative fill or annual excavation of 50 cubic yards or more in wetlands or below the ordinary high-water line (OHWL) of a waterway (or the 2-year recurrence interval flood elevation if OHWL cannot be determined).

This concurrence is for purposes of the state Removal-Fill Law only. Federal or local permit requirements may apply as well. The Army Corps of Engineers will review the report and decide jurisdiction for purposes of the Clean Water Act at the time that a report is submitted. We recommend that you attach a copy of this concurrence letter to both copies of any subsequent joint permit application to speed application review.

Please be advised that state law establishes a preference for avoidance of wetland impacts. Because measures to avoid and minimize wetland impacts may include reconfiguring parcel layout and size or development design, we recommend that you work with Department staff on appropriate site design before completing the city or county land use approval process.

This concurrence is based on information provided to the agency. The jurisdictional determination is valid for five years from the date of this letter unless new information necessitates a revision. Circumstances under which the Department may change a determination are found in OAR 141-090-0045 (available on our web site or upon request). In addition, laws enacted by the legislature and/or rules adopted by the

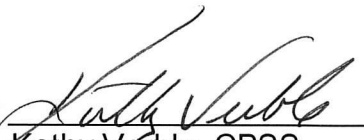
Department may result in a change in jurisdiction; individuals and applicants are subject to the regulations that are in effect at the time of the removal-fill activity or complete permit application. The applicant, landowner, or agent may submit a request for reconsideration of this determination in writing within six months of the date of this letter.

Thank you for having the site evaluated. Please phone me at 503-986-5232 if you have any questions.

Sincerely,


Peter Ryan, PWS
Jurisdiction Coordinator

Approved by


Kathy Verble, CPSS
Aquatic Resource Specialist

Enclosures

ec: C. Mirth Walker, PWS, SWCA Environmental Consultants
Steve Kay, AICP, Cascadia Planning & Development Services
Clackamas County Planning Department (Map enclosed for updating LWI)
Dominic Yballe, Corps of Engineers
Anita Huffman, DSL

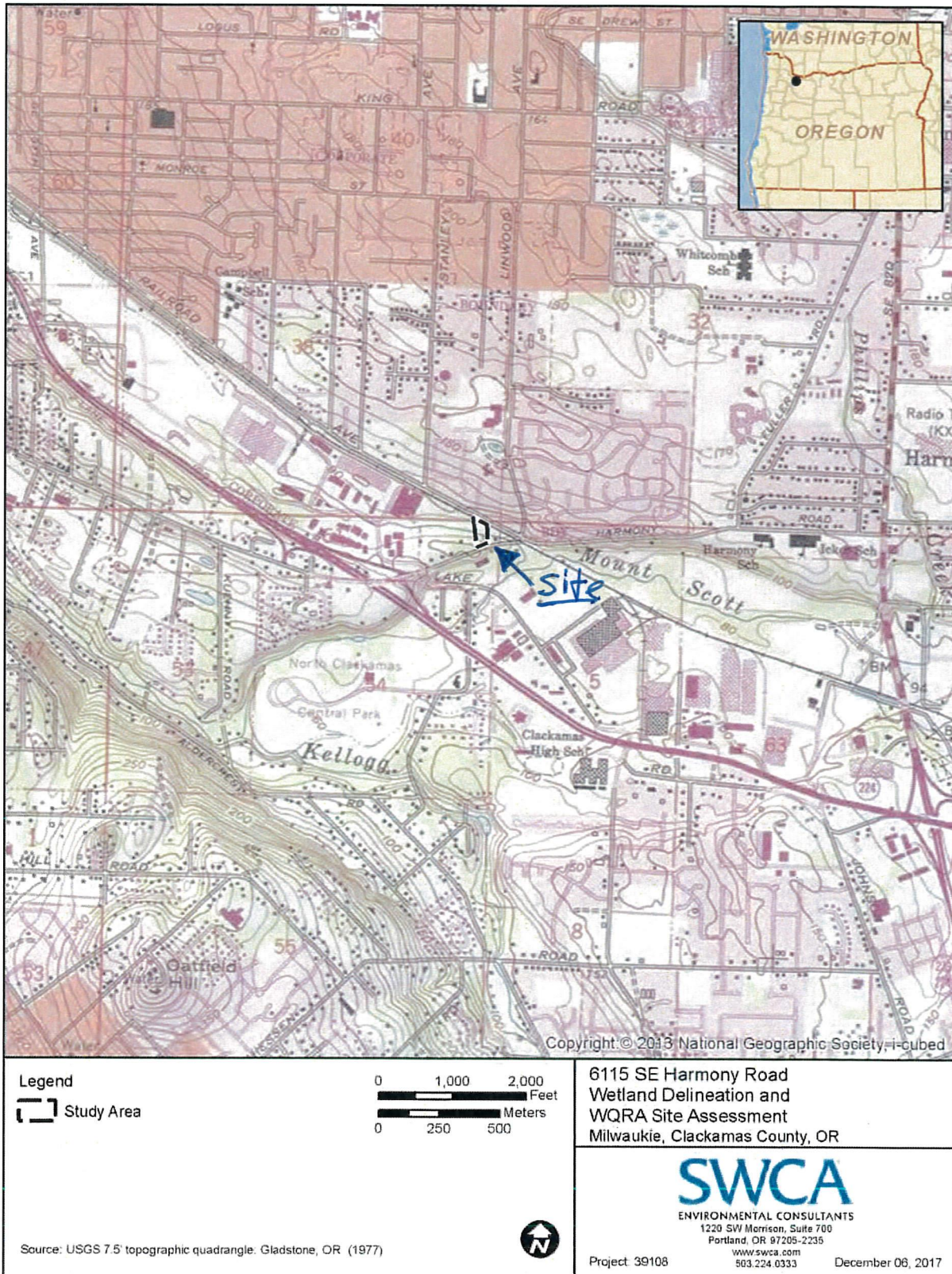


Figure 1. Site location map.

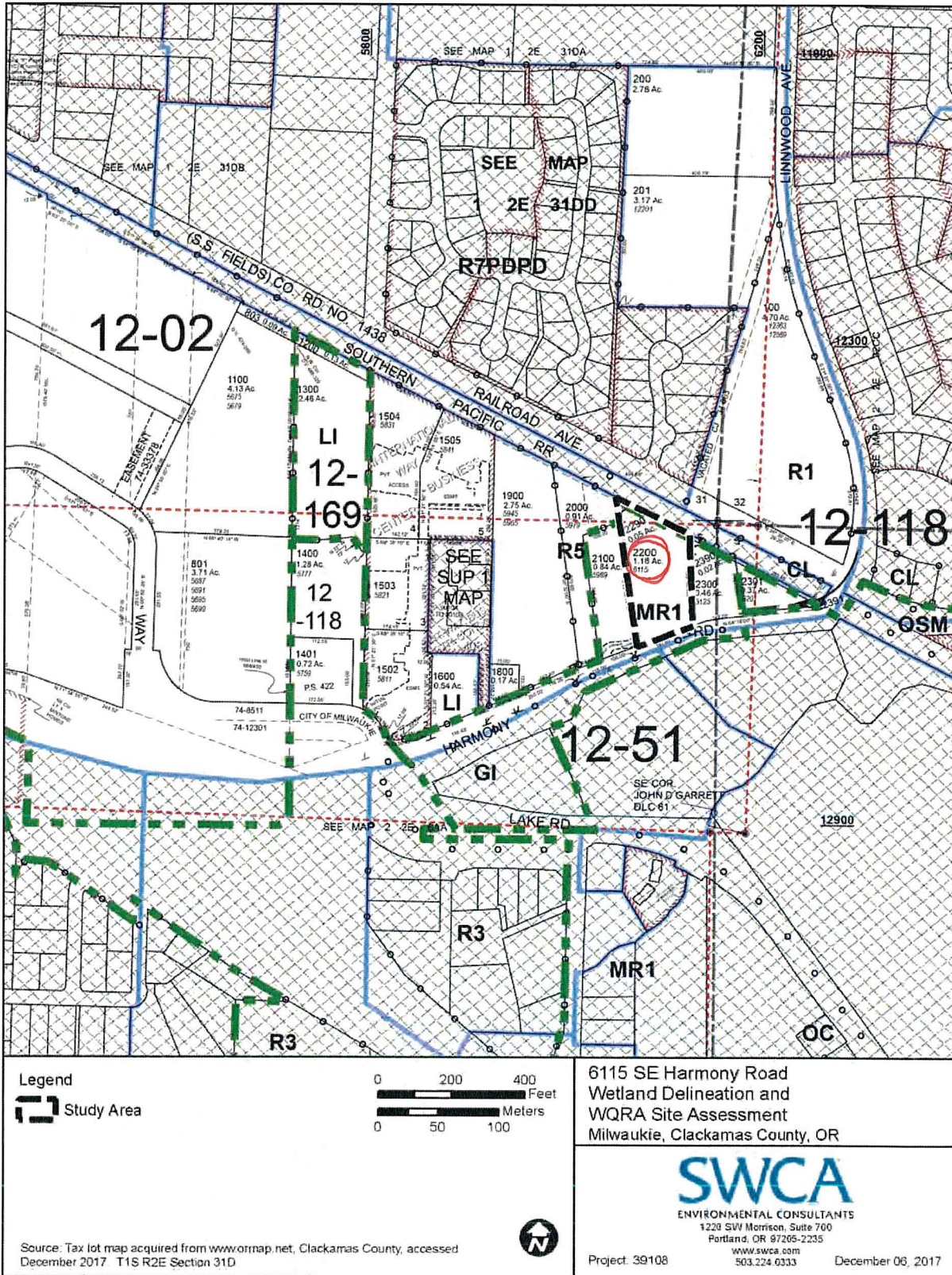
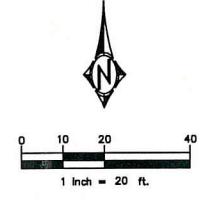
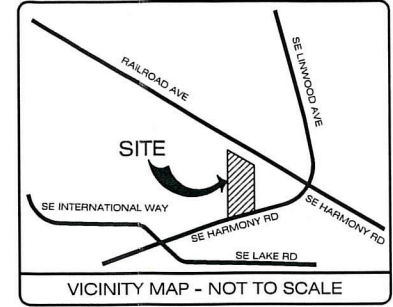
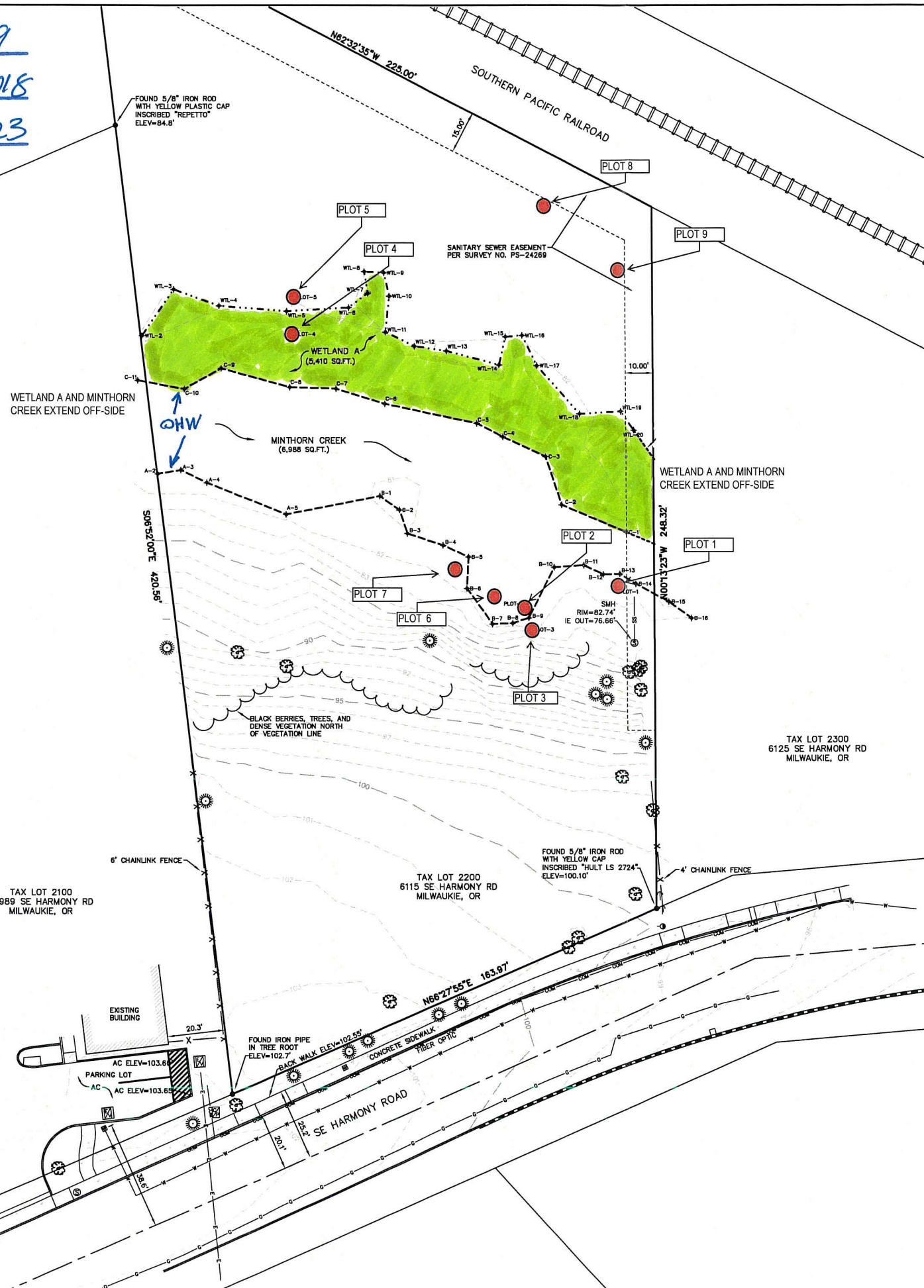


Figure 3. Tax lot map from ORmap with paper base.

DSL WD # 2017-0559
 Approval Issued 3/27/2018
 Approval Expires 3/27/2023



SURVEY LEGEND - EXISTING FEATURES

	CONCRETE WALL
	RAIL ROAD
	FENCE
	MINOR CONTOUR
	MAJOR CONTOUR
	WETLAND DELINEATION
	SANITARY SEWER LINE
	GAS LINE
	WATER LINE
	WATER METERSERVICE
	WATER VALVE
	CATCH BASIN / AREA DRAIN
	SANITARY SEWER MAN-HOLE
	UTILITY GUY POLE
	UTILITY GUY WIRE
	ELECTRIC VAULT
	COMMUNICATIONS PEDESTAL
	DECIDUOUS TREE
	EVERGREEN TREE
	SURVEY FOUND MONUMENT

GENERAL NOTES:

- BENCHMARK INFORMATION: 3-1/2" BRONZE DISK IN SIDEWALK PER USBT 2001-040. BEING THE NORTHEAST CORNER OF JOHN GARRETT DLC NO. 61, ALSO BEING THE SOUTHEAST CORNER OF JOHN GARRETT DLC NO. 38 ON THE NORTH LINE OF SECTION 5. SEE CLACKAMAS COUNTY SN 2004-386 SHEET 4 OF 14. ELEVATION = 85.30'
- THE BOUNDARY DEPICTED HERE ON IS PRELIMINARY AND IS SUBJECT TO CHANGE. IF ADDITIONAL MONUMENTS ARE FOUND ALONG THE NORTH LINE, THE BOUNDARY RETRACEMENT WILL BE REVISED ACCORDINGLY.
- THE PURPOSE OF THIS SURVEY WAS TO PROVIDE A TOPOGRAPHIC BASE MAP OF TAX LOT 2200 TAX MAP 1S 2E 31D SHOWING EXISTING CONDITIONS ALONG WITH THE WETLAND DELINEATION AND MARKERS. THE AREA NORTH OF THE HEAVY VEGETATION DEMARKATION HAS NOT BEEN ACCURATELY SURVEYED, OTHER THAN THE WETLAND MARKERS DEPICTED HEREON.
- AS OF THE DATE OF THIS MAPPING, THERE WERE NO UNDERGROUND UTILITY PAINT MARKINGS TO MAP THE SUBSURFACE UTILITIES.
- MANHOLES SHOWN HEREON ARE TO CENTER OF MANHOLE LID, NOT CENTER OF STRUCTURE.
- THE WETLAND, WATER BOUNDARIES AND SAMPLE PLOT LOCATIONS, DELINEATED WITH EITHER FLAGS IN SOIL OR FLAGGING TIED TO BRANCHES, HAVE A HORIZONTAL MAPPING ACCURACY OF ±1'.

SUMMIT JOB NO.:	998-187
TOPOGRAPHIC SURVEY	SE HARMONY RD TOPO
PREPARED FOR:	ED WILLIAMS
SURVEY DATE:	9/19/16
DRAWN BY:	CLM
MODIFIED:	12/28/17 - CLM - ADDED WETLAND BUFFER LINES
	12/28/17 - CLM - ADDED ADJL TOPO IN OFFSITE PARKING AREA ON TL 2100
	02/28/18 - CLM - MODIFIED SENSITIVE AREA LINETYPES

EXISTING CONDITIONS
 TAX LOT 2200
 TAX MAP 1S 2E 31D
 CLACKAMAS COUNTY, OREGON



SHEET **FIGURE**
08

**WATER QUALITY RESOURCE
SITE ASSESSMENT/MITIGATION PLAN**

Water Quality Resource Site Assessment

Date: March 21, 2018
To: Ed Williams, Old Time Investments, Inc.
Steve Kay, Cascadia Planning + Development Services
From: C. Mirth Walker, PWS, Senior Wetland Scientist
Tom Dee, PWS, Wetland Scientist
Subject: Harmony Road Townhomes, 6115 SE Harmony Road, Milwaukie, Oregon
Section 31D, T1S, R2E, Tax Lot 2200, Clackamas County
Water Quality Resource Site Assessment

INTRODUCTION

SWCA Environmental Consultants (SWCA) conducted a wetland and waters delineation and a vegetated corridor assessment on behalf of Old Time Investments, Inc., to meet the natural resource assessment requirements under the City of Milwaukie Municipal Code (MMC) Natural Resources (NR) Code Section 19.402 (City of Milwaukie 2016). The site was recently annexed into the City of Milwaukie (City) and is zoned R-2. Vegetated Corridors were preliminarily mapped on the site by Metro and the City (City of Milwaukie 2009). This mapping was later removed on the adopted NR Administrative Map when the site was still located outside of the city limits. Water Quality Resources (WQR), including a wetland and a stream (Minthorn Creek), were delineated on the site by certified Professional Wetland Scientists and surveyed and mapped by a licensed Professional Land Surveyor. The wetland delineation report (WDR) has been submitted to the Oregon Department of State Lands (DSL) for review and concurrence. Once the WDR has been approved by DSL (maximum 120 day timeline), then this will satisfy the Type II boundary verification process in MMC 19.402.15.A.2.

The approximately 1.18-acre site (based on the tax lot map; a 1991 survey showed the site as 1.32 acres) is Tax Lot 2200 on Clackamas County Tax Map 1S 2E 31D, located approximately 500 feet west of the intersection of SE Harmony Road and SE Railroad Avenue, at 6115 SE Harmony Road, in Milwaukie, Oregon (Figures 1–3).

EXISTING CONDITIONS

The site is within the Kellogg Creek watershed (Hydrologic Unit Code [HUC] 12: 170900120102) (Oregon Explorer 2017). The site is bordered by SE Harmony Road to the south; an apartment complex to the west; riparian forest, open meadow, the Union Pacific railroad, and SE Railroad Avenue to the north; and an abandoned residence to the east. A single-family residence and surrounding trees were removed from the site in 2010. Land use adjacent to the site is primarily light industry to the south and residential to the west, north, and east. Surrounding topography is

relatively flat and gently undulating. Site topography slopes gently to the north and then steeply down to the creek drainage. Minthorn Creek flows across the site from west to east. The area north of the creek is relatively flat and then slopes up to the north toward the railroad tracks.

The southern portion of the property consists of a cleared, grassy area with a row of trees along SE Harmony Road. Trees include dawn redwood (*Metasequoia glyptostroboides*), Douglas-fir (*Pseudotsuga menziesii*), bird cherry (*Prunus avium*), and big-leaf maple (*Acer macrophyllum*). The understory beneath the row of trees is predominantly Himalayan blackberry (*Rubus armeniacus*) and English ivy (*Hedera helix*). There is a small gravel pad in the southwest corner of the property, adjacent to SE Harmony Road. Vegetation immediately south of the creek is dominated by invasive species such as English laurel (*Prunus laurocerasus*), Himalayan blackberry, and English ivy. Ivy was observed vining high into the trees in the riparian corridor. A sewer line and easement is present along the northern property boundary, and crosses the stream along the eastern property boundary, with a manhole located south of the stream, in an upland area.

The northern portion of the site is riparian forest dominated by Oregon ash (*Fraxinus latifolia*) and black cottonwood (*Populus trichocarpa*), with a mid-story of red-osier dogwood (*Cornus alba*), English hawthorn (*Crataegus monogyna*), and snowberry (*Symphoricarpos albus*). English ivy is abundant throughout the corridor and a thornless blackberry variety (*Rubus* sp.) is spreading into the site from a nearby clearing to the west. Yellow-flag iris (*Iris pseudacorus*) borders the creek, with occasional patches of skunk cabbage (*Lysichiton americanus*).

According to the Natural Resources Conservation Service (NRCS), soils on the majority of the site are mapped as Wapato silty clay loam (Unit 84), with a small portion of Woodburn silt loam, 3%–8% slopes (Unit 91B) in the southwestern corner and Salem silt loam 0%–7% slopes (Unit 76B) in the northwestern corner of the property (NRCS 2015) (Figure 4). Wapato soils are hydric and Salem soils are upland soils. Woodburn soils are upland soils with small hydric inclusions of Huberly and Dayton soils.

No wetlands or waters were mapped on the North Clackamas Urban Area Wetland Inventory and Goal 5 Assessment for Clackamas County (SRI/Shapiro 1994) (Figure 5). The U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (Figure 6) mapped Minthorn Creek as riverine upper perennial, unconsolidated bottom deepwater habitat, with a permanently flooded water regime (R3UBH) (USFWS 2017). The City of Milwaukie’s preliminary WQR mapping provided by Metro is shown in Figure 7 (City of Milwaukie 2017). There are no Habitat Conservation Areas (HCA) on the site.

METHODS

SWCA used guidance presented in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)* (USACE 2010), *Regulatory Guidance Letter 05-05* (USACE 2005), and Oregon Administrative Rules (OAR) (DSL 2017a), to characterize wetlands and waters within the site. The wetlands and waters delineation was conducted on August 25, 2016, by C. Mirth Walker, Professional Wetland Scientist (PWS) and Evan Dulin, wetland scientist. An additional site visit was conducted after city annexation on October 17, 2017, by C. Mirth Walker and Tom Dee, PWS. Soils, vegetation, and

indicators of hydrology were recorded at seven sample plot locations (Attachment A). The wetland boundary, Ordinary High Water Line (OHWL), and sample plot locations were flagged in the field, and mapped by a professional land surveyor. Map accuracy is within ± 1 foot.

The vegetated corridor was assessed according to the MMC NR Table 19.402.11.C, Mitigation Requirements for WQRs. Class A WQRs are in “good” condition, Class B WQRs are in “marginal” condition, and Class C WQRs are in “poor” condition. The City is currently using the Portland Plant List as the “Milwaukie Native Plant List” (City of Portland Bureau of Planning and Sustainability 2016). A list of vegetation observed on the site is provided in Attachment B. Representative site photographs are included in Attachment C.

The wetland was assessed using the Oregon Freshwater Wetland Assessment Method (OFWAM) (Roth et al. 1996), as outlined in MCC 19.402.15.A.2.a.(1)(b).

RESULTS

Water Quality Resources

Minthorn Creek

Minthorn Creek is a freshwater, perennial stream that flows across the center of the site from west to east (Figure 8). The stream is designated a Primary Protected Water Feature because of its perennial character (MMC 19.402.15.D). Minthorn Creek occupies approximately 0.16 acre within the study area, and extends off-site to the east and west. Minthorn Creek is a tributary of Mt. Scott Creek.

The DSL Essential Salmonid Habitat (ESH) mapper (DSL 2017b) illustrates Mt. Scott Creek, approximately 400 feet south of the site, as ESH containing coho salmon (*Oncorhynchus kisutch*) and winter steelhead (*O. mykiss*). Minthorn Creek is not mapped as ESH, and it is assumed that there is a fish passage barrier present. The Oregon Department of Fish and Wildlife (ODFW) Fish Passage Barrier mapper does not depict a barrier at the confluence with Mt. Scott Creek (ODFW 2017).

The OHWL of Minthorn Creek was delineated based on evidence of high water, such as drift deposits (including sediment on tires and some Styrofoam debris), debris wracks, sparse vegetation, soil cracks, and changes in topography and plant communities. The bed and banks are composed of silt loam. The channel is relatively stable due to the abundant root systems of adjacent vegetation. Minthorn Creek overtops its banks seasonally. Floodplain roughness is high, due to abundant riparian vegetation and large woody debris. There is a small concrete dam and weir approximately 50 feet east and downstream of the eastern site boundary. The dam impounds water that backs up into the site throughout much of the year. Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) 41005C0036D indicates there is no 100-year floodplain within the site (FEMA 2017).

Wetland A

Wetland A is a small, approximately 0.12-acre wetland on the north side of Minthorn Creek (Figure 8). The wetland is classified as palustrine forested (PFO) using the *Classification of Deepwater Habitats of the United States* (Cowardin et al. 1979), and as valley slope (SV) and

riverine flow-through (RFT) using the *Guidebook for Hydrogeomorphic (HGM)–based Assessment of Oregon Wetland and Riparian Sites: Statewide Classification and Profiles* (Adamus 2001).

Wetland determination data forms are provided in Attachment A. The wetland was dominated by Oregon ash, red osier dogwood, English Hawthorn, colonial bentgrass (*Agrostis capillaris*), taper-fruit short-scale sedge (*Carex leptopoda*), skunk cabbage, yellow-flag iris, and soft rush (*Juncus effusus*). Soils met the Redox Dark Surface (F6) and Depleted Matrix (F3) hydric soil indicators. The Saturation (A3) wetland hydrology indicator was observed at Plot 6 during the October 2017 site visit.

Wetland A receives hydrology from the hyporheic zone associated with Minthorn Creek and from the slope to the northwest. The wetland is contiguous with the stream and occasionally receives overbank flooding during seasonal precipitation events.

OFWAM results for Wetland A (Attachment D) indicate that Wetland A has intact Water Quality and Hydrologic Control functions and is therefore considered a Title 3 wetland (Metro 2016).

Vegetated Corridors

Vegetated Corridor A: Approximately 0.23 acre (10,230 square feet)

Vegetated Corridor A (VECO A), on the south side of Minthorn Creek, is 50 feet wide based on the Primary Protected Water Feature designation of the stream and the slope being less than 25% (Figure 9), except where there is a small portion of the slope that is greater than 25%. The City has determined that because the steep portion is less than 150 feet in length that the buffer is still 50 feet in width (City of Milwaukie 2017). VECO A is measured from the southern OHWL of Minthorn Creek.

VECO A was in poor (Class C) and marginal (Class B) condition, according to Table 19.402.11.C. In VECO Plot A1, the combination of tree, shrub, and herbs cover was at least 80% but canopy coverage was only 25% to 50%. VECO Plot A1 had moderate tree canopy, moderate shrub cover, and very little groundcover. Dominant trees in this area included big-leaf maple and English laurel in the tree canopy. The shrub layer was dominated by English hawthorn and English laurel. English ivy and Himalayan blackberry dominated the understory. VECO Plot A2 was dominated by perennial ryegrass (*Lolium perenne*), with a few mature trees, including western red cedar (*Thuja plicata*), Douglas-fir, and dawn redwood.

Vegetated Corridor B: Approximately 0.25 acre (11,044 square feet)

VECO B, on the north side of Minthorn Creek and Wetland A, is 50 feet wide, based on the Title 3 designation of Wetland A and the slope being less than 25%. VECO B is measured from the northern edge of Wetland A.

VECO B was in good (Class A) condition according to Table 19.402.11.C. The combination of trees, shrubs, and herbs was greater than 80%, with more than 50% tree canopy coverage. Dominant trees included horse chestnut (*Aesculus hippocastanum*) and Oregon ash. The shrub layer was dominated by English laurel and clustered rose (*Rosa pisocarpa*), and the herb layer was dominated by sword fern (*Polystichum munitum*), field horsetail (*Equisetum arvense*), and wild mint (*Mentha arvensis*). Vegetated corridor data are summarized in Table 1.

Table 1. Vegetated Corridor Assessment Summary

Species Name	Common Name	Native Status	VECO A1 Cover	VECO A2 Cover	VECO B Cover
Trees					
<i>Acer macrophyllum</i>	big-leaf maple	Native	30	-	-
<i>Aesculus hippocastanum</i>	horse chestnut	Invasive, Nuisance*	-	-	60
<i>Fraxinus latifolia</i>	Oregon ash	Native	-	-	20
<i>Prunus laurocerasus</i>	English laurel	Invasive, Nuisance*	20	-	20
Shrubs					
<i>Crataegus monogyna</i>	English hawthorn	Invasive	20	-	-
<i>Corylus cornuta</i>	Beaked hazelnut	Native	10	-	-
<i>Ilex aquifolium</i>	English holly	Invasive	10	-	-
<i>Rosa pisocarpa</i>	Clustered rose	Native	-	-	20
<i>Rubus armeniacus</i>	Himalayan blackberry	Invasive, Noxious	10	-	-
Herbs					
<i>Hedera helix</i>	English ivy	Invasive	90	-	-
<i>Lolium perenne</i>	Perennial ryegrass	Non-native	-	100	-
<i>Rubus leucodermis</i>	Black-cap raspberry	Native	-	-	10
Total Aerial Cover			100	100	100
Total Canopy Cover			80	0	80
Corridor Condition			Marginal	Poor	Good

*Nuisance plant according to the Portland Plant List

Functions and Values Assessment

The functions and values of the WQRs within the site were assessed according to MMC 19.402.1.C.2. Seven functions were assessed using best professional judgment.

Vegetated corridors to separate protected water features from development.

VECO A: The southern portion of VECO A has a few large trees but no significant woody cover to separate the WQR from the proposed development. The northern portion of VECO has moderate woody cover to separate the WQR from proposed development.

VECO B contained substantial tree and shrub cover to separate Minthorn Creek and Wetland A from adjacent development.

Microclimate and shade.

VECO A provides moderate microclimate and shade to Minthorn Creek.

VECO B provides substantial microclimate and shade to WQRs within the site.

Streamflow moderation and water storage.

VECO A has considerable slope that conveys surface runoff to Minthorn Creek. Vegetation in the corridor helps to slow surface runoff to help offset peak flows during storm events. There is an upland depression in the northwestern part of the corridor that stores water and promotes infiltration.

VECO B is well vegetated, contains numerous small depressions, and a moderate amount of woody debris. Vegetation and woody debris add floodplain roughness that slows streamflow velocities. The microtopography stores water to attenuate peak flows.

Water filtration, infiltration, and natural purification.

VECO A is mostly steep and water only infiltrates at the toe of slope and in the small depression.

VECO B contains extensive microtopography that promotes infiltration, water filtration, and natural purification.

Bank stabilization and sediment and pollution control.

VECO A and VECO B both promote bank stabilization with abundant vegetation and associated root systems adjacent to Minthorn Creek. Their floodplains and upland depressions trap sediments and nutrients, and prevent them from flowing into the stream.

Large wood recruitment and retention and natural channel dynamics.

VECO A and VECO B both exhibit large wood recruitment and retention but the presence of invasive species hinders the growth of native species that would contribute to future recruitment and retention. Minthorn Creek is unconstrained within the site and possesses natural habitat features such as a convoluted shoreline, overhanging and in-water woody vegetation, and floodplain connection. The dam and weir downstream, just outside of the site, poses a threat to the reach of the stream within the site. If the dam and weir were removed, headcutting would occur and eventually alter the channel profile of the site reach. This could cause channel incision, disconnection from the floodplain, and conversion of adjacent wetland to upland.

Organic material resources.

VECO A provides moderate to minimal organic inputs to Minthorn Creek, and this is gradually decreasing over time, as invasive species suppress new plant growth.

VECO B provides moderate to abundant organic inputs to Minthorn Creek. This is decreasing over time in this area also, with the establishment of invasive species and the suppression of native plants.

Habitat Conservation Areas

There are no Habitat Conservation Areas (HCAs) within the site. There are a low value and a high value HCA approximately 350 feet west of the site.

PROPOSED IMPACTS

The proposed 15-unit multi-family apartment complex, pedestrian walkway, and parking area would permanently impact 2,734 square feet (0.06 acre) of VECO A (Figure 10), leaving 7,496 square feet (0.17 acre) of the vegetated corridor present on the south side of Minthorn Creek. No wetland, stream, or VECO B impacts are proposed.

Water Quality Resource Mitigation

Mitigation will be implemented according to MCC 19.402.11.B and 19.402.11.C. The applicant is proposing enhancement of the remaining VECO A per the planting specifications shown in Tables 2 and 3. VECO A is in poor (1,500 square feet) and marginal (5,883 square feet) condition (Figure 11) and mitigation will conform to the requirements in Table 19.402.11.C for poor condition.

Those requirements include:

- Restore disturbed areas with native species from the Milwaukie (Portland) Native Plant List, using a City-approved plan developed to represent the vegetative composition that would naturally occur on the site.
- Plant and/or seed all bare areas to provide 100% surface coverage.
- Inventory and remove debris and noxious materials.

VECO A will be vegetatively enhanced through the removal of invasive vegetation and the installation of native plants. Invasive vegetation is prolific within the corridor, and will be removed by manual, mechanical, and chemical treatment. Invasive trees, shrubs, and vines will be cut and swabbed with herbicide. Invasive and non-native grasses and will be cut and sprayed with herbicide. Treated areas will be reseeded with native herbaceous species.

Native vegetation will be planted throughout the majority of VECO A. There are small pockets of native vegetation that will not require planting with trees and shrubs, but will receive some herbaceous plants. All planted vegetation will be mulched in an area 18 inches in diameter and 3 inches deep, taking care to pull mulch away from the stem. Planted areas of VECO A will be watered with 1 inch of water per week between June 1 and October 1 for the first 2 years after planting. The area is small enough that an intricate irrigation system will not be required, and a few impact sprinklers should be sufficient. Vegetation maintenance must be conducted several times throughout the growing season.

The pre-settlement vegetation class consisted of riparian hardwoods and conifers (Oregon Explorer 2017). Plant species and locations have been selected based on historic composition, site conditions, and public safety. Fast-growing, short-lived species such as red alder (*Alnus rubra*) and black cottonwood have not been proposed within the mitigation area. Large trees have not been proposed immediately adjacent to the proposed development.

VECO A has been divided into two planting areas, based on the light and moisture tolerances of the proposed plants. VECO A1 contains species that prefer moisture and partial sun. VECO A2 contains species that prefer drier soils and full sun to partial shade. Tables 2 and 3 provide plant specifications for VECO A1 and VECO A2, respectively.

VECO A1 is located at the toe of the slope. Parts of the planting area are in full sun and parts are beneath the canopy of existing trees. Grass seed is specified for areas with full sun to partial shade. Ferns are specified in the area under existing canopy. Planting specifications for VECO A1 are shown in Table 2.

VECO A2 occupies the sloped portion of the corridor. This area is in direct sunlight and is drier than VECO A1. This area is currently dominated by a non-native grass species that will be replaced with native upland grasses. Upland plants that are good for stabilizing slopes have been specified in VECO A2. Low-growing shrubs will be planted immediately adjacent to the proposed structure, to avoid future hazards from large trees. Planting specifications for VECO A2 are shown in Table 3.

A few large trees have been recently removed from VECO A, and will be replaced with 0.5-inch caliper trees of the same species. Western red cedar and Douglas-fir were removed but 3 Douglas-fir are specified because western red cedar does not do well in direct sun when it is young.

Table 2. Planting Specifications for VECO A1 (5,883 square feet)

Species Name	Common Name	Quantity	Size	Spacing
Trees				
<i>Fraxinus latifolia</i>	Oregon ash	7	1 gallon	18' on center (o.c.)
<i>Malus fusca</i>	Pacific crabapple	6	1 gallon	18' o.c.
<i>Thuja plicata</i>	Western red cedar	7	1 gallon	18' o.c.
Shrubs				
<i>Cornus alba</i>	Red-osier dogwood	20	1 gallon	8' o.c.
<i>Rosa pisocarpa</i>	Clustered rose	20	1 gallon	8' o.c.
<i>Rubus spectabilis</i>	Salmonberry	20	1 gallon	8' o.c.
<i>Symphoricarpos albus</i>	Snowberry	20	1 gallon	8' o.c.
Herbs				
<i>Athyrium cyclosum</i>	Lady fern	20	1 gallon	8' o.c.
<i>Polystichum munitum</i>	Sword-fern	20	1 gallon	8' o.c.
Grasses				
<i>Agrostis exarata</i>	Spike bentgrass	2 lbs	seed	broadcast
<i>Deschampsia caespitosa</i>	Tufted hairgrass	2 lbs	seed	broadcast
<i>Elymus glaucus</i>	Blue wildrye	2 lbs	seed	broadcast

Table 3. Planting Specifications for VECO A2 (1,500 square feet)

Species Name	Common Name	Quantity	Size	Spacing
Trees				
<i>Acer macrophyllum</i>	Big-leaf maple	3	1 gallon	10' o.c.
<i>Crataegus douglasii</i>	Black hawthorn	3	1 gallon	10' o.c.
<i>Frangula purshiana</i>	Cascara buckthorn	3	1 gallon	10' o.c.
<i>Pseudotsuga menziesii</i>	Douglas-fir	3	1 gallon	10' o.c.
<i>Pseudotsuga menziesii</i>	Douglas-fir	3	0.5" caliper minimum	10' o.c.
Shrubs				
<i>Corylus cornuta</i>	Beaked hazelnut	5	1 gallon	6' o.c.
<i>Holodiscus discolor</i>	Oceanspray	5	1 gallon	6 o.c.
<i>Lonicera involucrata</i>	Black twinberry	5	1 gallon	6' o.c.
<i>Physocarpus capitatus</i>	Pacific ninebark	5	1 gallon	6' o.c.
<i>Rubus parviflorus</i>	Thimbleberry	5	1 gallon	6' o.c.
<i>Symphoricarpos albus</i>	Snowberry	5	1 gallon	6' o.c.
Herbs				
<i>Lupinus polyphyllus</i>	Bingleaf lupine	1 lbs	seed	broadcast
Grasses				
<i>Elymus glaucus</i>	Blue wildrye	2 lbs	seed	broadcast
<i>Festuca rubra ssp. rubra</i>	Red fescue	2 lbs	seed	broadcast

MONITORING AND REPORTING

Monitoring of the mitigation site is the ongoing responsibility of the property owner. Plants that die shall be replaced in kind as needed to ensure the minimum 80% survival rate. The City Planning Director may require a maintenance bond to cover the continued health and survival of all plantings. An annual report on the survival rate of all plantings shall be submitted for 2 years.

QUALIFICATIONS

C. Mirth Walker is a certified PWS with 27 years of experience delineating wetlands and streams and conducting inventories and functional assessments of riparian corridors and other habitats in the Pacific Northwest. Tom Dee is a certified PWS with 14 years of experience delineating wetlands and streams and conducting inventories and functional assessments of riparian corridors and other habitats in the Pacific Northwest. Ms. Walker and Mr. Dee have conducted hundreds of wetland and waters delineations, riparian corridor inventories, and functional assessments, and have many years of experience in wetland permitting, designing mitigation plans, and implementing and monitoring mitigation projects.

LIST OF FIGURES:

- Figure 1. Site location map
- Figure 2. Tax lot map (aerial base).
- Figure 3. Tax lot map (paper base).
- Figure 4. Soils map.
- Figure 5. Local Wetland Inventory map.
- Figure 6. National Wetlands Inventory map.
- Figure 7. City of Milwaukie's preliminary WQR mapping provided by Metro map.
- Figure 8. Existing condition wetland and waters delineation map.
- Figure 9. Existing condition vegetated corridor map.
- Figure 10. Proposed site development plan.
- Figure 11. Vegetated Corridor Plot Locations and Planting Areas

LIST OF ATTACHMENTS:

- Attachment A. Wetland determination data forms
- Attachment B. Site vegetation list
- Attachment C. Representative site photographs
- Attachment D. OFWAM data forms

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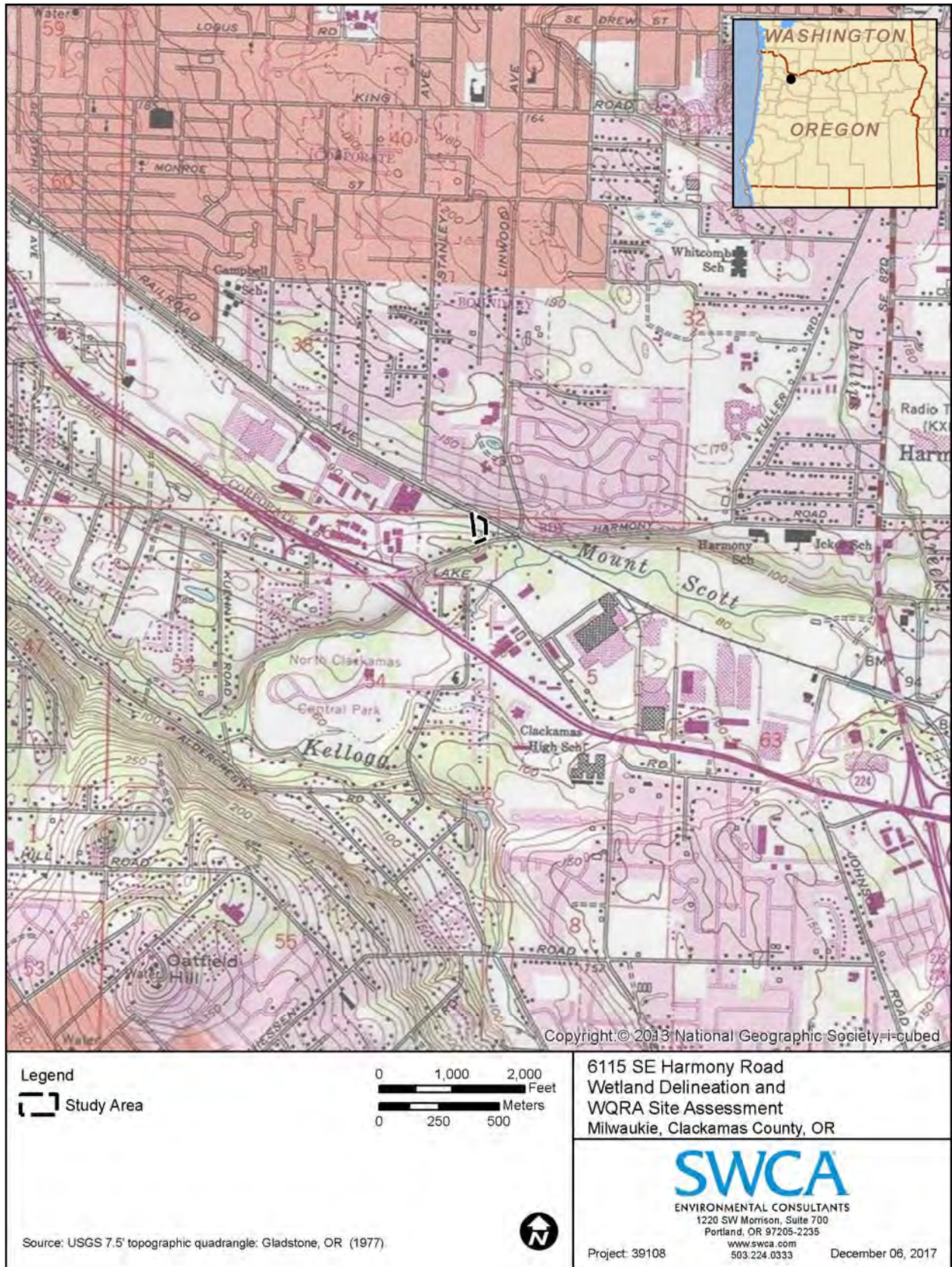


Figure 1. Site location map.



Figure 2. Tax lot map (Metro RLIS aerial base).

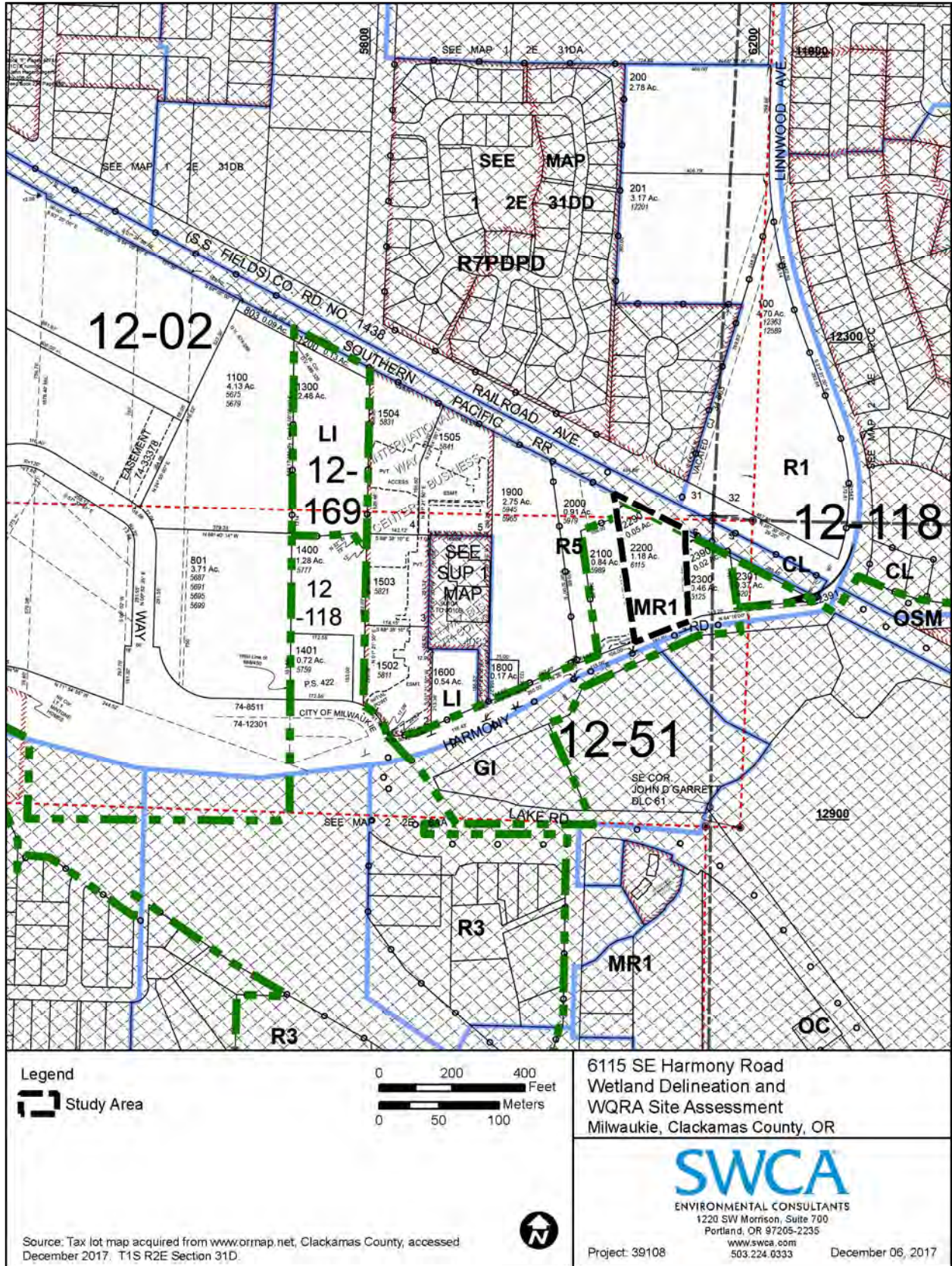


Figure 3. Tax lot map (ORmap paper base).



Figure 4. Soils map.

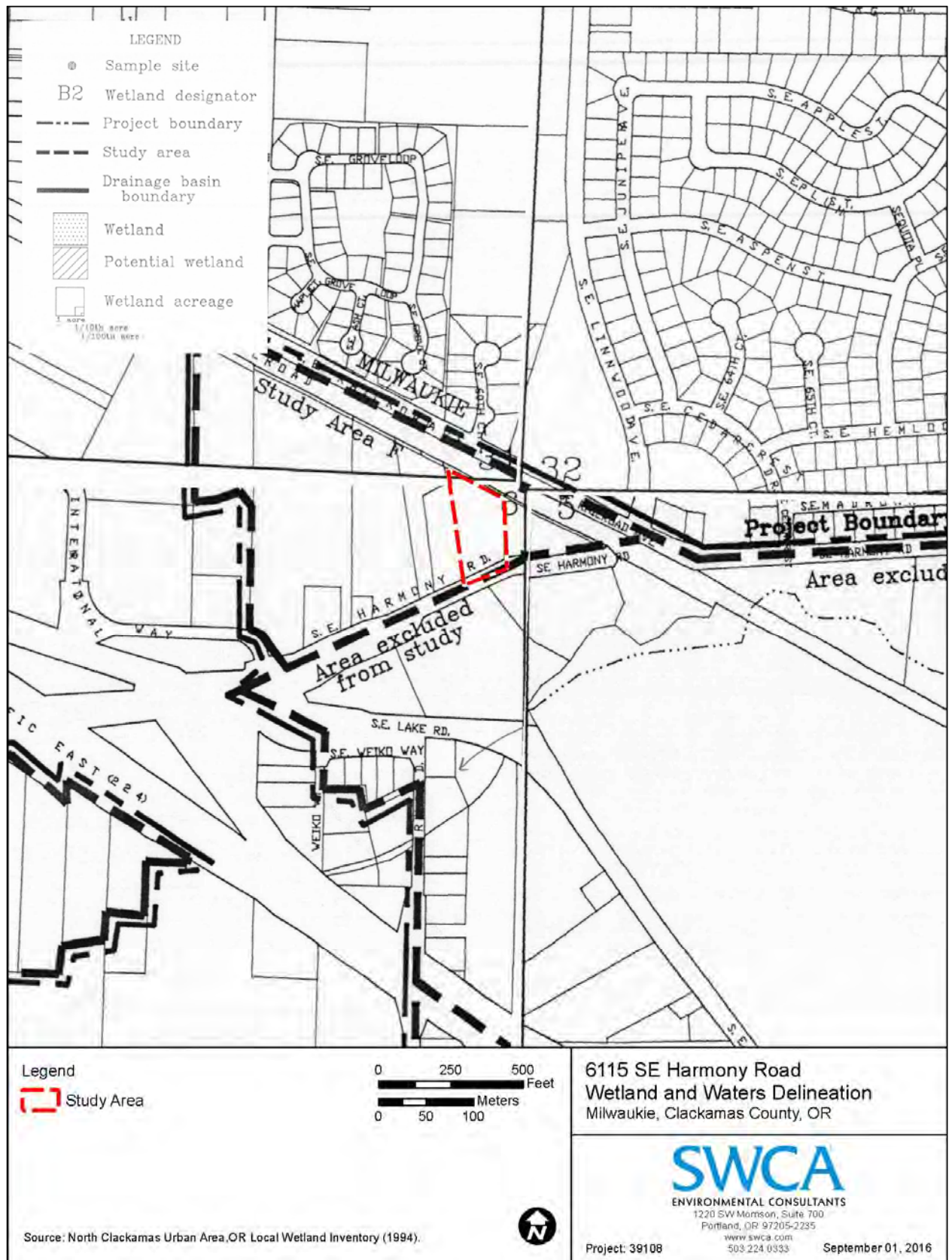


Figure 5. Local Wetland Inventory map.

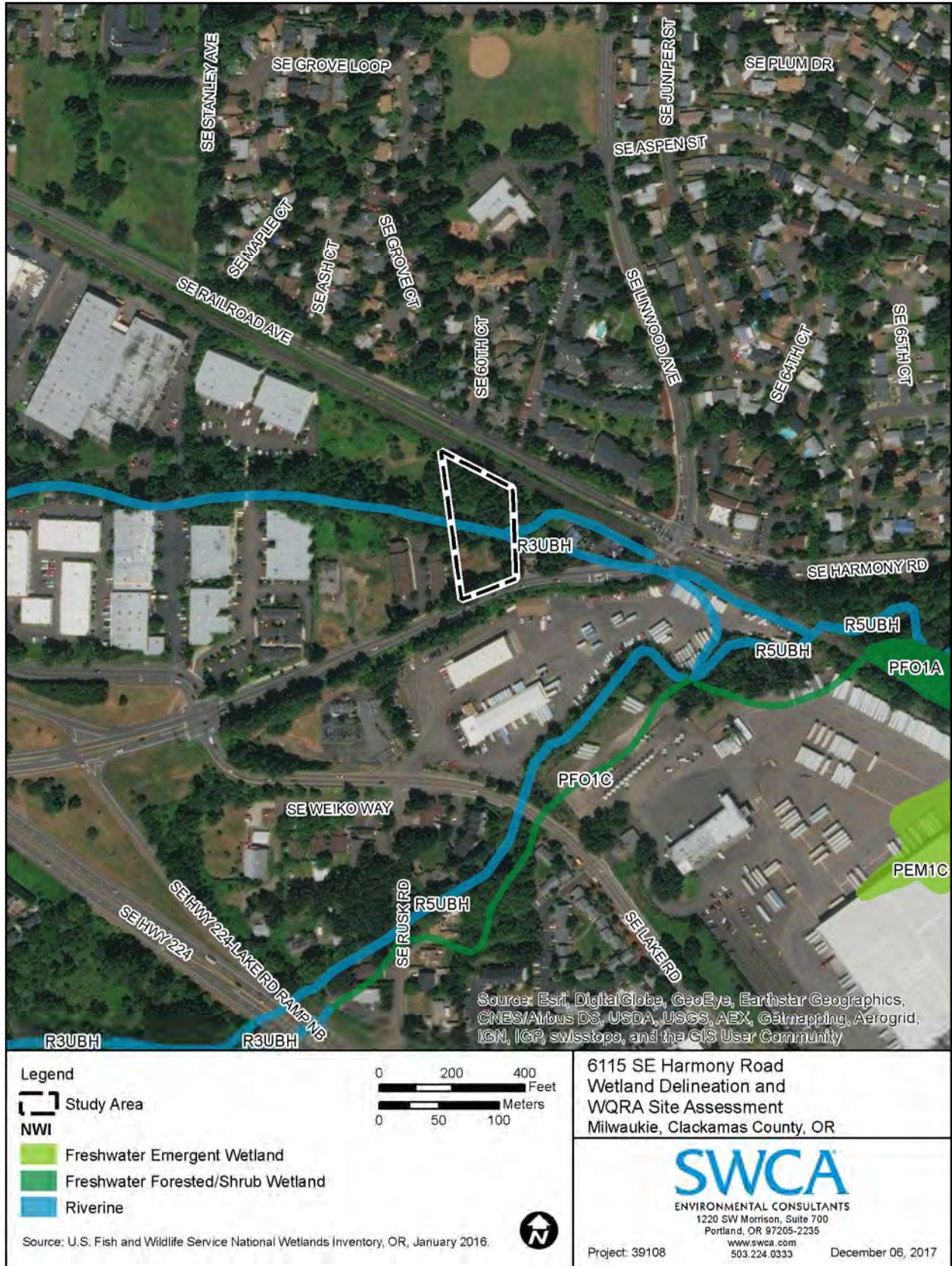


Figure 6. National Wetlands Inventory map .

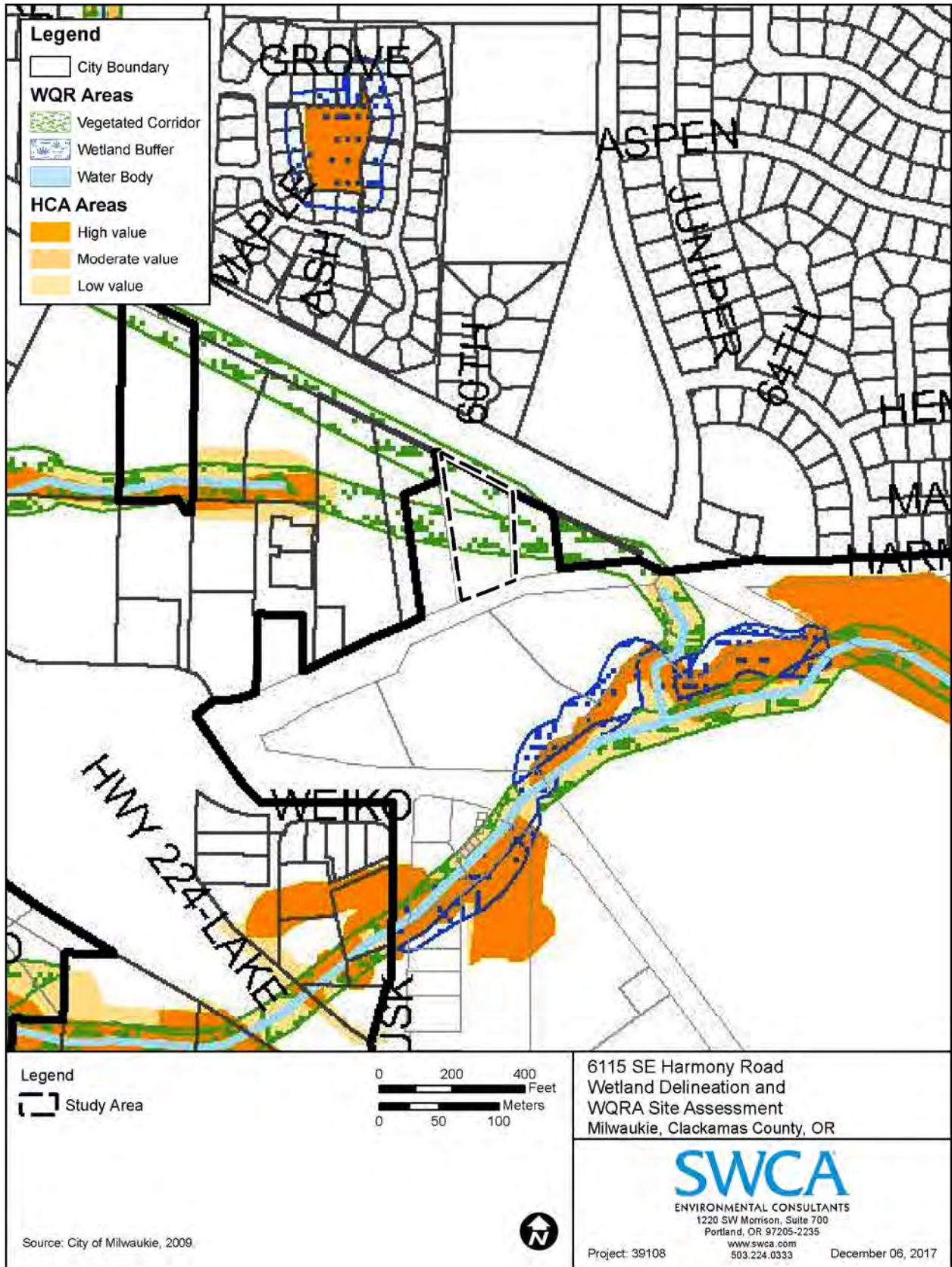
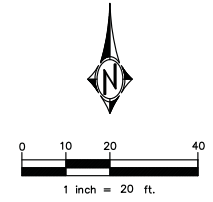
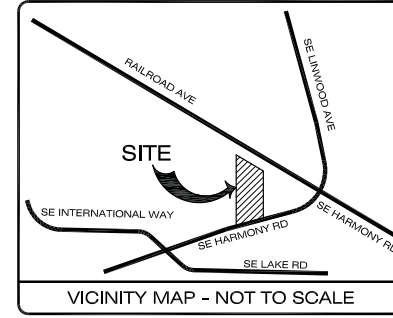
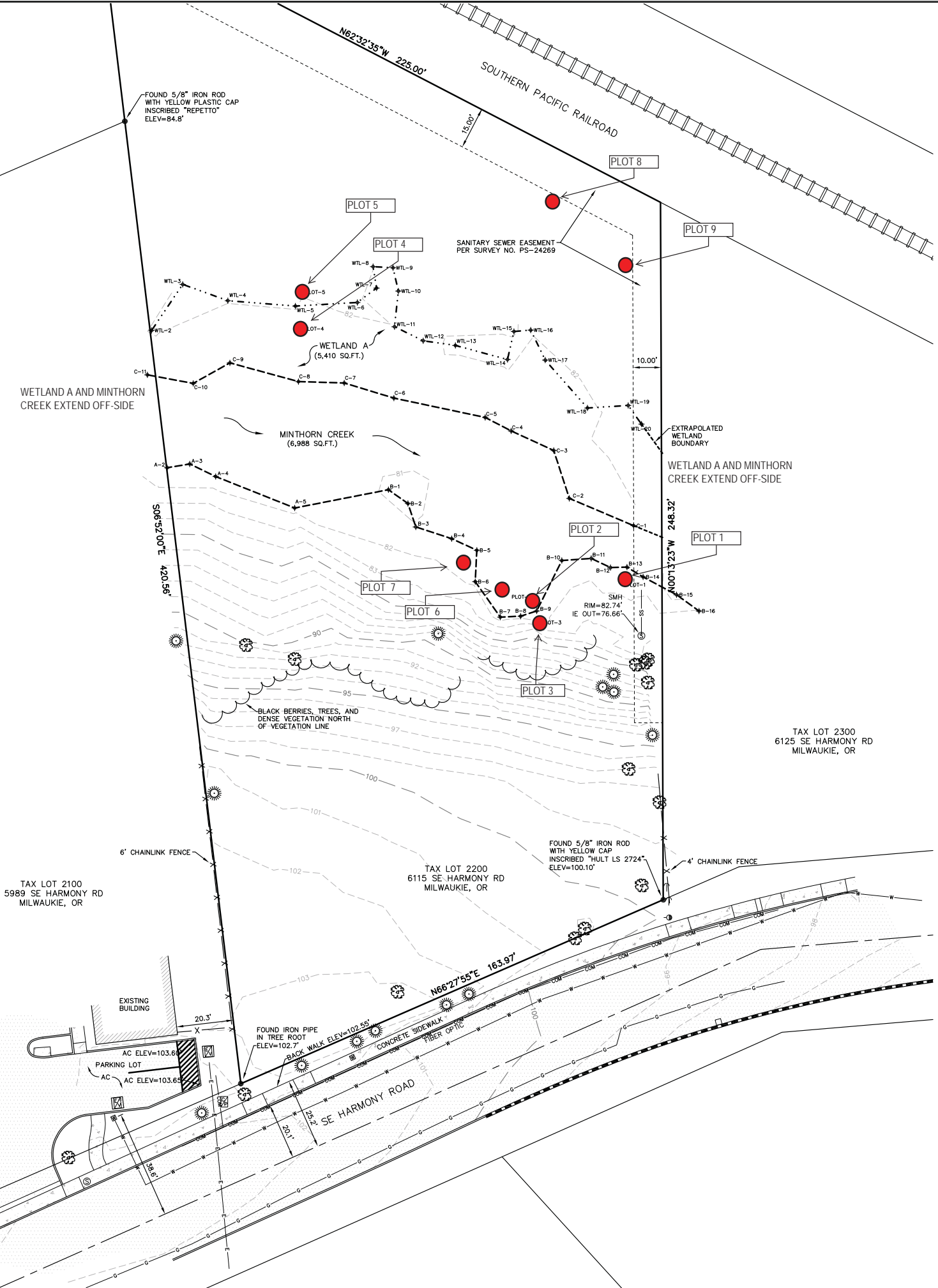


Figure 7. City of Milwaukie's preliminary WQR mapping provided by Metro map.

8



SURVEY LEGEND - EXISTING FEATURES

	CONCRETE WALL
	RAIL ROAD
	FENCE
	MINOR CONTOUR
	MAJOR CONTOUR
	WETLAND DELINEATION
	SANITARY SEWER LINE
	GAS LINE
	WATER LINE
	WATER METER/SERVICE
	WATER VALVE
	CATCH BASIN / AREA DRAIN
	SANITARY SEWER MANHOLE
	UTILITY GUY POLE
	UTILITY GUY WIRE
	ELECTRIC VAULT
	COMMUNICATIONS PEDESTAL
	DECIDUOUS TREE
	EVERGREEN TREE
	SURVEY FOUND MONUMENT

GENERAL NOTES:

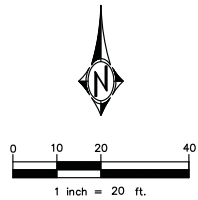
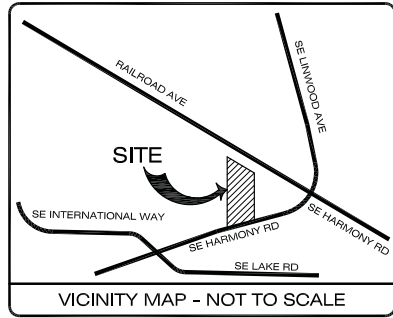
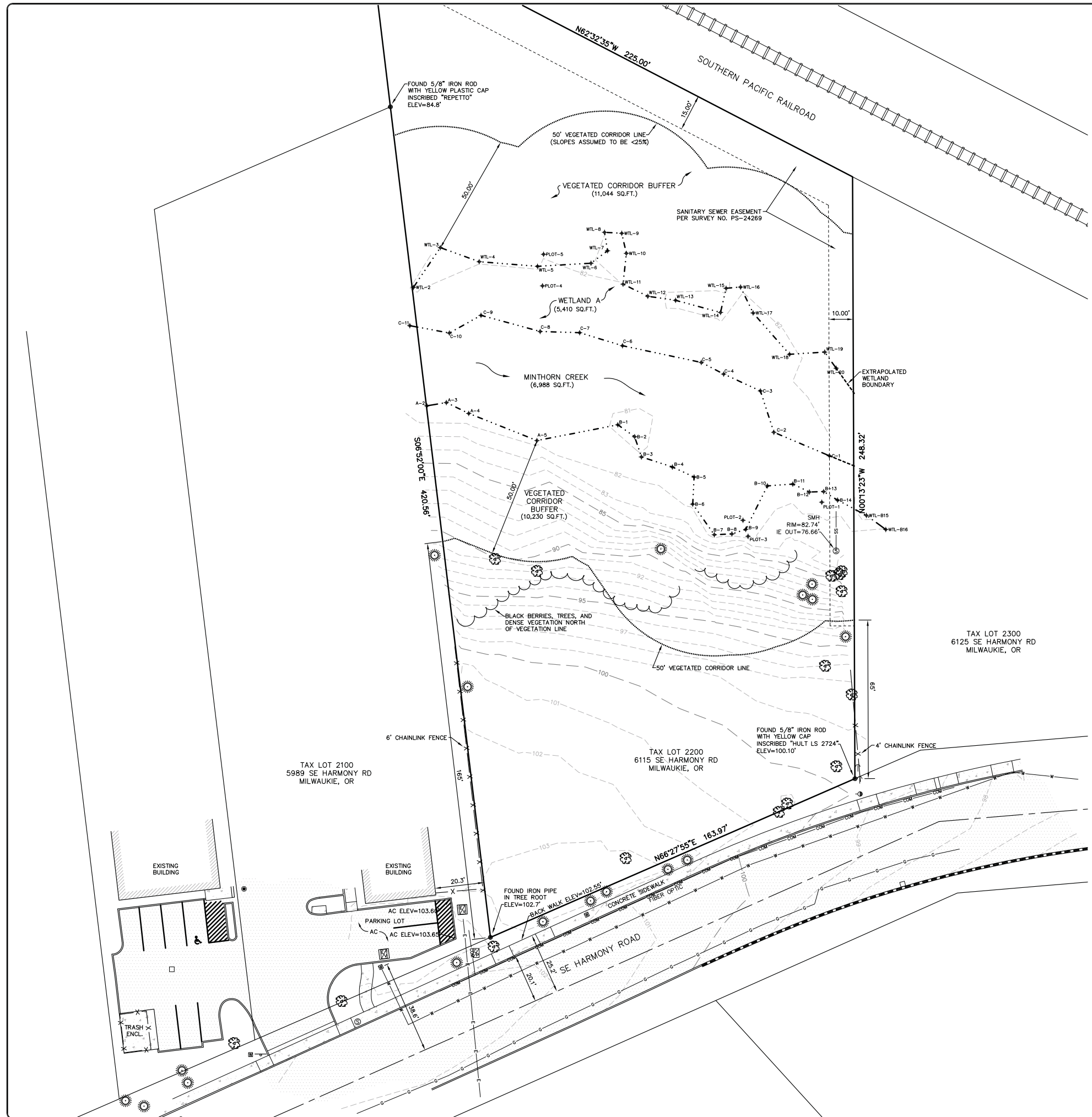
- BENCHMARK INFORMATION, 3-1/2" BRONZE DISK IN SIDEWALK PER USBT 2001-040, BEING THE NORTHEAST CORNER OF JOHN GARRETT DLC NO. 61, ALSO BEING THE SOUTHEAST CORNER OF JOHN GARRETT DLC NO. 38 ON THE NORTH LINE OF SECTION 5, SEE CLACKAMAS COUNTY SN 2004-356 SHEET 4 OF 14. ELEVATION = 85.30'
- THE BOUNDARY DEPICTED HERE ON IS PRELIMINARY AND IS SUBJECT TO CHANGE. IF ADDITIONAL MONUMENTS ARE FOUND ALONG THE NORTH LINE, THE BOUNDARY RETRACTION WILL BE REVISED ACCORDINGLY.
- THE PURPOSE OF THIS SURVEY WAS TO PROVIDE A TOPOGRAPHIC BASE MAP OF TAX LOT 2200 TAX MAP 15 2E 31D SHOWING EXISTING CONDITIONS ALONG WITH THE WETLAND DELINEATION AND MARKERS. THE AREA NORTH OF THE HEAVY VEGETATION DEMARKATION HAS NOT BEEN ACCURATELY SURVEYED, OTHER THAN THE WETLAND MARKERS DEPICTED HEREON.
- AS OF THE DATE OF THIS MAPPING, THERE WERE NO UNDERGROUND UTILITY PAINT MARKINGS TO MAP THE SUBSURFACE UTILITIES.
- MANHOLES SHOWN HEREON ARE TO CENTER OF MANHOLE LID, NOT CENTER OF STRUCTURE.
- THE WETLAND, WATER BOUNDARIES AND SAMPLE PLOT LOCATIONS, DELINEATED WITH EITHER FLAGS IN SOIL OR FLAGGING TIED TO BRANCHES, HAVE A HORIZONTAL MAPPING ACCURACY OF ±1'.

SUMMIT JOB NO.:	998-187
PREPARED FOR:	SE HARMONY RD TOPO
DATE:	9/19/16
DRAWN BY:	CLM
BY:	ED WILLIAMS
MODIFIED:	10/05/16 - CLM - ADDED WETLAND BUFFER LINES
MODIFIED:	10/05/16 - CLM - ADDED ADJ. TOPO IN OFFSITE PARKING AREA ON TL 2100
MODIFIED:	02/28/18 - CLM - MODIFIED SENSITIVE AREA LINES

TOPOGRAPHIC SURVEY
EXISTING CONDITIONS
 TAX LOT 2200
 TAX MAP 15 2E 31D
 CLACKAMAS COUNTY, OREGON



SHEET
 8



SURVEY LEGEND - EXISTING FEATURES

	CONCRETE WALL
	RAILROAD
	FENCE
	MINOR CONTOUR
	MAJOR CONTOUR
	WETLAND DELINEATION
	SANITARY SEWER LINE
	GAS LINE
	WATER LINE
	WATER METER/SERVICE
	WATER VALVE
	CATCH BASIN / AREA DRAIN
	SANITARY SEWER MANHOLE
	UTILITY GUY POLE
	UTILITY GUY WIRE
	ELECTRIC VAULT
	COMMUNICATIONS PEDESTAL
	DECIDUOUS TREE
	EVERGREEN TREE
	SURVEY FOUND MONUMENT

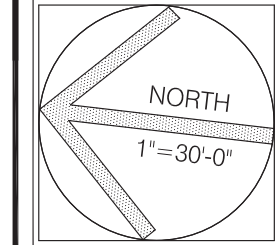
GENERAL NOTES:

- BENCHMARK INFORMATION, 3-1/2" BRONZE DISK IN SIDEWALK PER USBT 2001-040, BEING THE NORTHEAST CORNER OF JOHN GARRETT DLC NO. 61, ALSO BEING THE SOUTHEAST CORNER OF JOHN GARRETT DLC NO. 38 ON THE NORTH LINE OF SECTION 5, SEE CLACKAMAS COUNTY SN 2004-356 SHEET 4 OF 14. ELEVATION = 85.30'
- THE BOUNDARY DEPICTED HERE ON IS PRELIMINARY AND IS SUBJECT TO CHANGE. IF ADDITIONAL MONUMENTS ARE FOUND ALONG THE NORTH LINE, THE BOUNDARY RETRACTION WILL BE REVISED ACCORDINGLY.
- THE PURPOSE OF THIS SURVEY WAS TO PROVIDE A TOPOGRAPHIC BASE MAP OF TAX LOT 2200 TAX MAP 15 2E 31D SHOWING EXISTING CONDITIONS ALONG WITH THE WETLAND DELINEATION AND MARKERS. THE AREA NORTH OF THE HEAVY VEGETATION DEMARKATION HAS NOT BEEN ACCURATELY SURVEYED, OTHER THAN THE WETLAND MARKERS DEPICTED HEREON.
- AS OF THE DATE OF THIS MAPPING, THERE WERE NO UNDERGROUND UTILITY PAINT MARKINGS TO MAP THE SUBSURFACE UTILITIES.
- MANHOLES SHOWN HEREON ARE TO CENTER OF MANHOLE LID, NOT CENTER OF STRUCTURE.

SUMMIT JOB NO.: 998-187
 PREPARED FOR: SE HARMONY RD TOPO
 DRAWN BY: CLM
 SURVEY DATE: 9/19/16
 ED WILLIAMS
 MODIFIED: 10/05/16 - CLM - ADDED WETLAND BUFFER LINES
 MODIFIED: 12/08/17 - CLM - ADDED ADJ. TOPO IN OFF-SITE PARKING AREA ON TL 2100
 MODIFIED:

TOPOGRAPHIC SURVEY
EXISTING CONDITIONS
 TAX LOT 2200
 TAX MAP 15 2E 31D
 CLACKAMAS COUNTY, OREGON



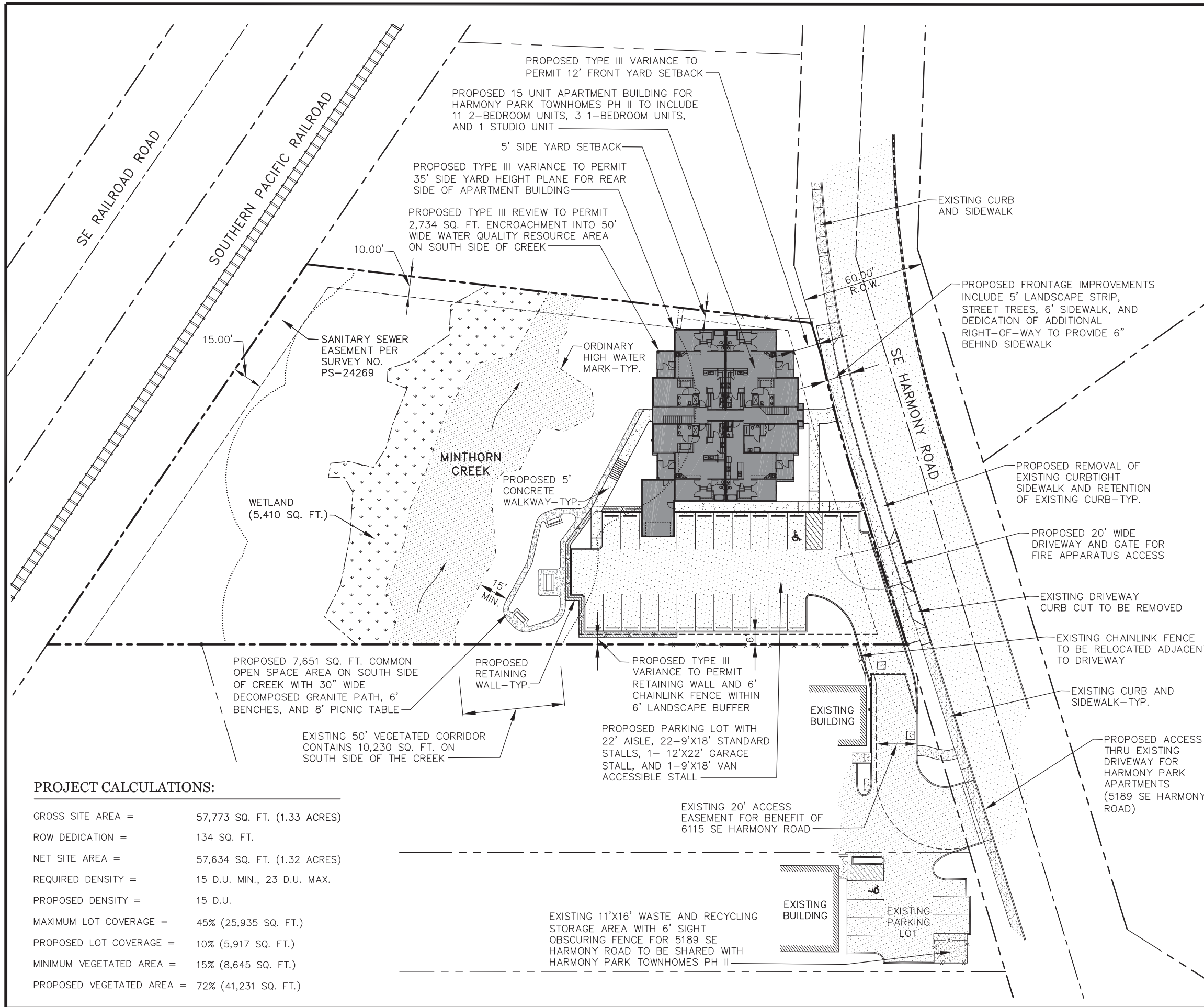


CITY OF MILWAUKIE LAND USE APPLICATION:
HARMONY PARK TOWNHOMES PH II
 T.L. 2200 / T.M. 1S2E31D
 CLACKAMAS COUNTY, OREGON
 6115 SE HARMONY ROAD
 MILWAUKIE, OR 97222

**PRELIMINARY
 SITE PLAN**
 MARCH 20, 2018

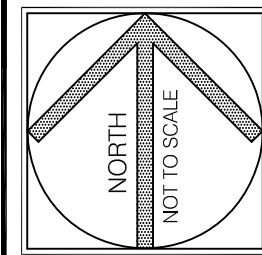
REVISIONS
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PROJECT CALCULATIONS:

GROSS SITE AREA =	57,773 SQ. FT. (1.33 ACRES)
ROW DEDICATION =	134 SQ. FT.
NET SITE AREA =	57,634 SQ. FT. (1.32 ACRES)
REQUIRED DENSITY =	15 D.U. MIN., 23 D.U. MAX.
PROPOSED DENSITY =	15 D.U.
MAXIMUM LOT COVERAGE =	45% (25,935 SQ. FT.)
PROPOSED LOT COVERAGE =	10% (5,917 SQ. FT.)
MINIMUM VEGETATED AREA =	15% (8,645 SQ. FT.)
PROPOSED VEGETATED AREA =	72% (41,231 SQ. FT.)



CITY OF MILWAUKIE LAND USE APPLICATION
HARMONY PARK TOWNHOMES PH II
 6115 SE HARMONY ROAD
 MILWAUKIE, OR 97222
 TAX LOT 2200 TAX MAP 1S2E31D
 CLACKAMAS COUNTY, OREGON

AERIAL PHOTOGRAPH
 DECEMBER 18, 2017

REVISIONS
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ATTACHMENT A:

WETLAND DETERMINATION DATA FORMS

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Harmony Road Townhomes City/County: - / Clackamas Sampling Date: 8/25/2016
 Applicant/Owner: Cascadia Planning & Dev. Svcs/Old Time Investments, Inc. State: OR Sampling Point: P1
 Investigator(s): C. Mirth Walker, Evan Dulin Section, Township, Range: 31D, T1S, R2E, TL 2200
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 1
 Subregion (LRR): A, Northwest Forests and Coast Lat: 45.432065 Long: -122.600305 Datum: NAD 1983
 Soil Map Unit Name: Wapato silty clay loam (84) NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>	
Precipitation prior to fieldwork: <u>No rainfall 2 weeks prior, 6.41" above normal for WYTD, 2.06" below normal for CYTD.</u>			
Remarks: <u> </u>			

VEGETATION

Tree Stratum (Plot size: <u>30' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Fraxinus latifolia</u>	<u>30%</u>	<u>Yes</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>80%</u> (A/B)
2. <u>Alnus rubra</u>	<u>10%</u>	<u>Yes</u>	<u>FAC</u>	
3. <u>Salix lasiandra</u>	<u>10%</u>	<u>Yes</u>	<u>FACW</u>	
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
<u>50%</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>10' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Rubus armeniacus</u>	<u>80%</u>	<u>Yes</u>	<u>FAC</u>	Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>40</u> x 2 = <u>80</u> FAC species <u>93</u> x 3 = <u>279</u> FACU species <u>95</u> x 4 = <u>380</u> UPL species <u>10</u> x 5 = <u>50</u> Column Totals: <u>238</u> (A) <u>789</u> (B) Prevalence Index = B/A = <u>3.32</u>
2. <u>Prunus laurocerasus</u>	<u>10%</u>	<u>No</u>	<u>NOL</u>	
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
<u>90%</u> = Total Cover				
Herb Stratum (Plot size: <u>5' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Hedera helix</u>	<u>95%</u>	<u>Yes</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> 5 - Wetland Non-Vascular Plants ¹ <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present. Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>
2. <u>Ranunculus repens</u>	<u>3%</u>	<u>No</u>	<u>FAC</u>	
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
6. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
7. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
8. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
9. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
10. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
11. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
<u>98%</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>10' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>	Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
<u>0%</u> = Total Cover				
% Bare Ground in Herb Stratum <u>2%</u>				

Remarks: Trees are narrow diameter at breast height: Oregon ash is 10", alder 7", willow 5". Entered by: NED QC by: cmw

SOIL

Sampling Point: **P1**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR 3/2	100					SiL	
2-7+	10YR 3/2	96	7.5YR 3/3	4	C	M	SiL	faint redox

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

Restrictive Layer (if present):	Hydric Soil Present? Yes _____ No <u>X</u>
Type: <u>None</u>	
Depth (inches): <u>N/A</u>	

Remarks: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)
Shovel refusal at 7" from large buried rock.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Frost-Heave Hummocks (D7)

Field Observations:	Wetland Hydrology Present? Yes _____ No <u>X</u>
Surface Water Present? Yes _____ No <u>X</u> Depth (inches): <u>N/A</u>	
Water Table Present? Yes _____ No <u>X</u> Depth (inches): <u>>7</u>	
Saturation Present? Yes _____ No <u>X</u> Depth (inches): <u>>7</u> (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No indicators of hydrology. Entered by: NED QC by: cmw

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Harmony Road Townhomes City/County: - / Clackamas Sampling Date: 8/25/2016
 Applicant/Owner: Cascadia Planning & Dev. Svcs/Old Time Investments, Inc. State: OR Sampling Point: P2
 Investigator(s): C. Mirth Walker, Evan Dulin Section, Township, Range: 31D, T1S, R2E, TL 2200
 Landform (hillslope, terrace, etc.): Stream floodplain Local relief (concave, convex, none): Concave Slope (%): <2
 Subregion (LRR): A, Northwest Forests and Coast Lat: 45.432050 Long: -122.600420 Datum: NAD 1983
 Soil Map Unit Name: Wapato silty clay loam (84) NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u> </u>	No <u>X</u>	Is the Sampled Area within a Wetland? Water Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>	
Wetland Hydrology Present?	Yes <u>X</u>	No <u> </u>	
Precipitation prior to fieldwork: <u>No rainfall 2 weeks prior, 6.41" above normal for WYTD, 2.06" below normal for CYTD.</u>			
Remarks: Sample plot was taken below the OHWM of Minthorn Creek. Area is considered a water and not a wetland.			

VEGETATION

Tree Stratum (Plot size: <u>30' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
<u>0%</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>10' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>3</u> x 3 = <u>9</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>95</u> x 5 = <u>475</u> Column Totals: <u>98</u> (A) <u>484</u> (B) Prevalence Index = B/A = <u>4.94</u>
1. <u>Prunus laurocerasus</u>	<u>95%</u>	<u>Yes</u>	<u>NOL</u>	
2. <u>Rubus armeniacus</u>	<u>3%</u>	<u>No</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
<u>98%</u> = Total Cover				
Herb Stratum (Plot size: <u>5' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ¹ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants ¹ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>0%</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>10' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
<u>0%</u> = Total Cover				
% Bare Ground in Herb Stratum <u>100%</u>				

Remarks: _____ Entered by: NED QC by: cmw
Prunus laurocerasus is rooted upslope of floodplain area but shades the floodplain area. *Rubus armeniacus* is rooted at the OHWM boundary.

SOIL

Sampling Point: **P2**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-9	10YR 3/1	100					SiL	pebbly
9-15+	10YR 3/1	67	7.5YR 4/4	3	C	M	SiL	pebbly, ~mucky
			10YR 3/2	30	C	M	SiL	pebbly, faint redox
@25	2.5Y 3/1	90	10YR 3/2	10	C	M	SiL	faint redox

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)		³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)		

Restrictive Layer (if present):	Hydric Soil Present? Yes _____ No <u>X</u>
Type: <u>None</u>	
Depth (inches): <u>N/A</u>	

Remarks: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)
 Rounded and broken rocks up to 3" diameter with organics in soil profile. Soil was moist. Probed below 15 inches.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input checked="" type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Frost-Heave Hummocks (D7)

Field Observations:	Wetland Hydrology Present? Yes <u>X</u> No _____
Surface Water Present? Yes _____ No <u>X</u> Depth (inches): <u>N/A</u>	
Water Table Present? Yes _____ No <u>X</u> Depth (inches): <u>>15</u>	
Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>25</u>	
(includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Sediments on tires along OHWM boundary. Entered by: NED QC by: cmw

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Harmony Road Townhomes City/County: - / Clackamas Sampling Date: 8/25/2016
 Applicant/Owner: Cascadia Planning & Dev. Svcs/Old Time Investments, Inc. State: OR Sampling Point: P3
 Investigator(s): C. Mirth Walker, Evan Dulin Section, Township, Range: 31D, T1S, R2E, TL 2200
 Landform (hillslope, terrace, etc.): Toeslope Local relief (concave, convex, none): Convex Slope (%): 3
 Subregion (LRR): A, Northwest Forests and Coast Lat: 45.432019 Long: -122.600394 Datum: NAD 1983
 Soil Map Unit Name: Wapato silty clay loam (84) NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u> </u>	No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>	
Precipitation prior to fieldwork: <u>No rainfall 2 weeks prior, 6.41" above normal for WYTD, 2.06" below normal for CYTD.</u>			
Remarks: <u>Sample plot located about 8' SE of P2.</u>			

VEGETATION

Tree Stratum (Plot size: <u>30' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
<u>0%</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>10' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Prunus laurocerasus</u>	<u>95%</u>	<u>Yes</u>	<u>NOL</u>	
2. <u>Rubus armeniacus</u>	<u>5%</u>	<u>No</u>	<u>FAC</u>	
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
<u>100%</u> = Total Cover				
Herb Stratum (Plot size: <u>5' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
6. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
7. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
8. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
9. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
10. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
11. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
<u>0%</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>10' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
<u>0%</u> = Total Cover				
% Bare Ground in Herb Stratum <u>100%</u>				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
 Total Number of Dominant Species Across All Strata: 1 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:
 Total % Cover of: Multiply by:
 OBL species 0 x 1 = 0
 FACW species 0 x 2 = 0
 FAC species 5 x 3 = 15
 FACU species 0 x 4 = 0
 UPL species 95 x 5 = 475
 Column Totals: 100 (A) 490 (B)
 Prevalence Index = B/A = 4.90

Hydrophytic Vegetation Indicators:
 1 - Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 5 - Wetland Non-Vascular Plants¹
 Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes No X

Remarks: Entered by: NED QC by: cmw

SOIL

Sampling Point: **P3**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10+	10YR 3/2	100					SiL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

Restrictive Layer (if present):

Type: None

Depth (inches): N/A

Hydric Soil Present? Yes No

Remarks: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)
Shovel refusal at 10" from buried rocks.

HYDROLOGY

Wetland Hydrology Indicators:

<u>Primary Indicators (minimum of one required; check all that apply)</u>		<u>Secondary Indicators (2 or more required)</u>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:

Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <u>N/A</u>	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <u>>10</u>	
Saturation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <u>>10</u>	
(includes capillary fringe)			

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Entered by: NED QC by: cmw

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Harmony Road Townhomes City/County: - / Clackamas Sampling Date: 8/25/2016
 Applicant/Owner: Cascadia Planning & Dev. Svcs/Old Time Investments, Inc. State: OR Sampling Point: P4
 Investigator(s): C. Mirth Walker, Evan Dulin Section, Township, Range: 31D, T1S, R2E, TL 2200
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): <2
 Subregion (LRR): A, Northwest Forests and Coast Lat: 45.432292 Long: -122.600752 Datum: NAD 1983
 Soil Map Unit Name: Wapato silty clay loam (84) NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u>X</u>	No <u> </u>	
Wetland Hydrology Present?	Yes <u>X</u>	No <u> </u>	
Precipitation prior to fieldwork: <u>No rainfall 2 weeks prior, 6.41" above normal for WYTD, 2.06" below normal for CYTD.</u>			
Remarks: <u>Sample plot located on north side of stream.</u>			

VEGETATION

Tree Stratum (Plot size: <u>30' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
1. <u>Fraxinus latifolia</u>	<u>70%</u>	<u>Yes</u>	<u>FACW</u>	
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
<u>70%</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>10' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Fraxinus latifolia</u>	<u>10%</u>	<u>Yes</u>	<u>FACW</u>	
2. <u>Cornus alba</u>	<u>10%</u>	<u>Yes</u>	<u>FACW</u>	
3. <u>Crataegus monogyna</u>	<u>5%</u>	<u>No</u>	<u>FAC</u>	
4. <u>Rubus armeniacus</u>	<u>5%</u>	<u>No</u>	<u>FAC</u>	
5. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
<u>30%</u> = Total Cover				
Herb Stratum (Plot size: <u>5' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Agrostis capillaris</u>	<u>50%</u>	<u>Yes</u>	<u>FAC</u>	
2. <u>Carex leptopoda</u>	<u>20%</u>	<u>Yes</u>	<u>FAC</u>	
3. <u>Equisetum arvense</u>	<u>10%</u>	<u>No</u>	<u>FAC</u>	
4. <u>Mentha arvensis</u>	<u>10%</u>	<u>No</u>	<u>FACW</u>	
5. <u>Bidens frondosa</u>	<u>3%</u>	<u>No</u>	<u>FACW</u>	
6. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
7. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
8. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
9. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
10. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
11. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
<u>93%</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>10' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Rubus leucodermis</u>	<u>3%</u>	<u>No</u>	<u>FACU</u>	
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
<u>3%</u> = Total Cover				
% Bare Ground in Herb Stratum <u>7%</u>				

Remarks: Lysichiton americanus and Iris pseudacorus (both OBL) also occur nearby in the wetland area. Entered by: NED QC by: cmw

SOIL

Sampling Point: **P4**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 2/2	100					SiL	
4-12	10YR 3/1	90	5YR 3/4	10	C	M, PL	SiL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)		³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)		

Restrictive Layer (if present):	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Type: <u>None</u>	
Depth (inches): <u>N/A</u>	

Remarks: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)
Shovel refusal at 12" from large living roots.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Drift Deposits (B3)	<input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Frost-Heave Hummocks (D7)

Field Observations:	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>X</u>	
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>>12</u>	
Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>>12</u>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Entered by: NED QC by: cmw

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Harmony Road Townhomes City/County: - / Clackamas Sampling Date: 8/25/2016
 Applicant/Owner: Cascadia Planning & Dev. Svcs/Old Time Investments, Inc. State: OR Sampling Point: P5
 Investigator(s): C. Mirth Walker, Evan Dulin Section, Township, Range: 31D, T1S, R2E, TL 2200
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Convex Slope (%): <2
 Subregion (LRR): A, Northwest Forests and Coast Lat: 45.432317 Long: -122.600797 Datum: NAD 1983
 Soil Map Unit Name: Wapato silty clay loam (84) NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u> </u>	No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>	
Precipitation prior to fieldwork: <u>No rainfall 2 weeks prior, 6.41" above normal for WYTD, 2.06" below normal for CYTD.</u>			
Remarks: <u>Sample plot is located about 15' North of P4.</u>			

VEGETATION

Tree Stratum (Plot size: <u>30' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Populus balsamifera</u>	<u>30%</u>	<u>Yes</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50%</u> (A/B)
2. <u>Thuja plicata</u>	<u>10%</u>	<u>Yes</u>	<u>FAC</u>	
3. <u>Abies grandis</u>	<u>5%</u>	<u>No</u>	<u>FACU</u>	
4. <u>Fraxinus latifolia</u>	<u>5%</u>	<u>No</u>	<u>FACW</u>	
<u>50%</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>10' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Crataegus monogyna</u>	<u>30%</u>	<u>Yes</u>	<u>FAC</u>	Prevalence Index worksheet: <u> </u> Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>5</u> x 2 = <u>10</u> FAC species <u>70</u> x 3 = <u>210</u> FACU species <u>110</u> x 4 = <u>440</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>185</u> (A) <u>660</u> (B) Prevalence Index = B/A = <u>3.57</u>
2. <u>Ilex aquifolium</u>	<u>10%</u>	<u>Yes</u>	<u>FACU</u>	
3. <u>Prunus caroliniana</u>	<u>5%</u>	<u>No</u>	<u>FACU</u>	
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
<u>45%</u> = Total Cover				
Herb Stratum (Plot size: <u>5' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Hedera helix</u>	<u>80%</u>	<u>Yes</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u> </u> 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> 5 - Wetland Non-Vascular Plants ¹ <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present. Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>
2. <u>Polystichum munitum</u>	<u>5%</u>	<u>No</u>	<u>FACU</u>	
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
6. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
7. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
8. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
9. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
10. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
11. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
<u>85%</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>10' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Rubus leucodermis</u>	<u>5%</u>	<u>Yes</u>	<u>FACU</u>	Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
<u>5%</u> = Total Cover				
% Bare Ground in Herb Stratum <u>15%</u>				
Remarks: <u>Fraxinus latifolia is rooted at boundary overhanging the sample plot.</u>				Entered by: <u>NED</u> QC by: <u>cmw</u>

SOIL

Sampling Point: **P5**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR 3/1	100					SiL	
3-9+	10YR 3/1	99	10YR 3/2	1	C	M	SiL	faint redox

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	³ Indicators of hydrophytic vegetation and
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	wetland hydrology must be present,
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	unless disturbed or problematic.

Restrictive Layer (if present):

Type: None

Depth (inches): N/A

Hydric Soil Present? Yes _____ No X

Remarks: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No <u>X</u>	Depth (inches): <u>N/A</u>	Wetland Hydrology Present? Yes _____ No <u>X</u>
Water Table Present? Yes _____ No <u>X</u>	Depth (inches): <u>>9</u>	
Saturation Present? Yes _____ No <u>X</u>	Depth (inches): <u>>9</u>	
(includes capillary fringe)		

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Entered by: NED QC by: cmw

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Harmony Road Townhomes City/County: Milwaukie / Clackamas Sampling Date: 10/17/2017
 Applicant/Owner: Cascadia Planning & Dev. Svcs/Old Time Investments, Inc. State: OR Sampling Point: P6
 Investigator(s): C. Mirth Walker, Tom Dee Section, Township, Range: 31D, T1S, R2E, TL 2200
 Landform (hillslope, terrace, etc.): Floodplain bench Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR): A, Northwest Forests and Coast Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Wapato silty clay loam (84) NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present?	Yes <u>X</u>	No _____	
Wetland Hydrology Present?	Yes <u>X</u>	No _____	
Precipitation prior to fieldwork: Remarks: <u>Below OHWM of Minthorn Creek; 2 feet downslope of P2</u>			

VEGETATION

Tree Stratum (Plot size: <u>30' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50%</u> (A/B)
1. <u>Salix lasiandra</u>	<u>10%</u>	<u>Yes</u>	<u>FACW</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
<u>10%</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>10' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>10</u> x 2 = <u>20</u> FAC species <u>10</u> x 3 = <u>30</u> FACU species <u>5</u> x 4 = <u>20</u> UPL species <u>40</u> x 5 = <u>200</u> Column Totals: <u>65</u> (A) <u>270</u> (B) Prevalence Index = B/A = <u>4.15</u>
1. <u>Prunus laurocerasus</u>	<u>40%</u>	<u>Yes</u>	<u>NOL</u>	
2. <u>Rubus armeniacus</u>	<u>5%</u>	<u>No</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>45%</u> = Total Cover				
Herb Stratum (Plot size: <u>5' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ¹ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants ¹ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present.
1. <u>Galium aparine</u>	<u>5%</u>	<u>Yes</u>	<u>FACU</u>	
2. <u>Solanum dulcamara</u>	<u>5%</u>	<u>Yes</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>10%</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>10' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
<u>0%</u> = Total Cover				
% Bare Ground in Herb Stratum <u>90%</u>				
Remarks: _____ Entered by: <u>KL</u> QC by: <u>cmw</u>				

SOIL

Sampling Point: **P6**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-5	10YR 3/1	100					SiCL	w/ rounded gravel
5-11	10YR 4/1	85	10YR 5/8	10	C	M	SiCL	w/ rounded gravel
			2.5YR 4/8	5	C	M		
11-20	10YR 4/1	100					SiCL	w/ rounded gravel

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)		³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)		

Restrictive Layer (if present):		Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Type: <u>None</u>	Depth (inches): <u>N/A</u>	

Remarks: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)	
Primary Indicators (minimum of one required; check all that apply)			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			

Field Observations:				Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <u> </u>		
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <u> </u>		
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): <u>12</u>		

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Entered by: KL QC by: cmw
Glistening peds at 12"; moist to surface. Laurel rooted upslope of depression.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Harmony Road Townhomes City/County: Milwaukie / Clackamas Sampling Date: 10/17/2017
 Applicant/Owner: Cascadia Planning & Dev. Svcs/Old Time Investments, Inc. State: OR Sampling Point: P7
 Investigator(s): C. Mirth Walker, Tom Dee Section, Township, Range: 31D, T1S, R2E, TL 2200
 Landform (hillslope, terrace, etc.): Toeslope Local relief (concave, convex, none): convex Slope (%): 2
 Subregion (LRR): A, Northwest Forests and Coast Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Wapato silty clay loam (84) NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No <u>X</u>	Is the Sampled Area within a Wetland?	Water	
Hydric Soil Present?	Yes _____	No <u>X</u>		Yes _____	No <u>X</u>
Wetland Hydrology Present?	Yes _____	No <u>X</u>			
Precipitation prior to fieldwork: _____					
Remarks: Upslope of P6 to West.					

VEGETATION

Tree Stratum (Plot size: <u>30' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. <u>Alnus rubra</u>	<u>10%</u>	Yes	FAC	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)	
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>5</u> (B)	
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>40%</u> (A/B)	
4. _____	_____	_____	_____	Prevalence Index worksheet:	
<u>10%</u> = Total Cover				Total % Cover of: _____ Multiply by: _____	
Sapling/Shrub Stratum (Plot size: <u>10' r</u>)					
1. <u>Prunus laurocerasus</u>	<u>40%</u>	Yes	NOL	OBL species	<u>0</u> x 1 = <u>0</u>
2. <u>Rubus armeniacus</u>	<u>10%</u>	Yes	FAC	FACW species	<u>0</u> x 2 = <u>0</u>
3. _____	_____	_____	_____	FAC species	<u>20</u> x 3 = <u>60</u>
4. _____	_____	_____	_____	FACU species	<u>20</u> x 4 = <u>80</u>
5. _____	_____	_____	_____	UPL species	<u>40</u> x 5 = <u>200</u>
<u>50%</u> = Total Cover				Column Totals:	<u>80</u> (A) <u>340</u> (B)
Herb Stratum (Plot size: <u>5' r</u>)					
1. <u>Hedera helix</u>	<u>15%</u>	Yes	FACU	Prevalence Index = B/A = <u>4.25</u>	
2. <u>Polystichum munitum</u>	<u>5%</u>	Yes	FACU	Hydrophytic Vegetation Indicators:	
3. _____	_____	_____	_____	1 - Rapid Test for Hydrophytic Vegetation _____	
4. _____	_____	_____	_____	2 - Dominance Test is >50% _____	
5. _____	_____	_____	_____	3 - Prevalence Index is ≤3.0 ¹ _____	
6. _____	_____	_____	_____	4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____	
7. _____	_____	_____	_____	5 - Wetland Non-Vascular Plants ¹ _____	
8. _____	_____	_____	_____	Problematic Hydrophytic Vegetation ¹ (Explain) _____	
9. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present.	
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
<u>20%</u> = Total Cover				Hydrophytic Vegetation Present?	
Woody Vine Stratum (Plot size: <u>10' r</u>)					
1. _____	_____	_____	_____	Yes _____	No <u>X</u>
2. _____	_____	_____	_____		
<u>0%</u> = Total Cover					
% Bare Ground in Herb Stratum <u>80%</u>					
Remarks: _____ Entered by: <u>KL</u> QC by: <u>cmw</u>					

SOIL

Sampling Point: **P7**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-11	10YR 4/2	100					SiL	w/ 5" rounded river rock
11-18	10YR 5/3	100					SiL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

Restrictive Layer (if present):

Type: None

Depth (inches): N/A

Hydric Soil Present? Yes No

Remarks: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

HYDROLOGY

Wetland Hydrology Indicators:

<u>Primary Indicators (minimum of one required; check all that apply)</u>		<u>Secondary Indicators (2 or more required)</u>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:

Surface Water Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches): <input type="text"/>	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Water Table Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches): <input type="text"/>	
Saturation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches): <input type="text"/>	
(includes capillary fringe)				

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Entered by: KL QC by: cmw

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Harmony Road Townhomes City/County: Milwaukie / Clackamas Sampling Date: 12/5/2017
 Applicant/Owner: Cascadia Planning & Dev. Svcs/Old Time Investments, Inc. State: OR Sampling Point: P8
 Investigator(s): C. Mirth Walker, Tom Dee Section, Township, Range: 31D, T1S, R2E, TL 2200
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 3
 Subregion (LRR): A, Northwest Forests and Coast Lat: _____ Long: _____ Datum: NAD 1983
 Soil Map Unit Name: Wapato silty clay loam (84) NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present?	Yes <u>X</u>	No _____	
Wetland Hydrology Present?	Yes _____	No <u>X</u>	
Precipitation prior to fieldwork: <u>3.48 inches 2 weeks prior (Portland); 1.94" above normal WYTD; 11.73" above normal CYTD.</u>			
Remarks: <u>Central north sewer easement.</u>			

VEGETATION

Tree Stratum (Plot size: <u>30' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Populus balsamifera</u>	<u>60%</u>	<u>Yes</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
<u>60%</u> = Total Cover				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50%</u> (A/B)
Sapling/Shrub Stratum (Plot size: <u>10' r</u>)				
1. <u>Fraxinus latifolia</u>	<u>20%</u>	<u>Yes</u>	<u>FACW</u>	
2. <u>Prunus laurocerasus</u>	<u>10%</u>	<u>Yes</u>	<u>NOL</u>	
3. <u>Crataegus monogyna</u>	<u>5%</u>	<u>No</u>	<u>FAC</u>	
4. <u>Corylus cornuta</u>	<u>2%</u>	<u>No</u>	<u>FACU</u>	
5. <u>Ilex aquifolium</u>	<u>2%</u>	<u>No</u>	<u>FACU</u>	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>25</u> x 2 = <u>50</u> FAC species <u>71</u> x 3 = <u>213</u> FACU species <u>104</u> x 4 = <u>416</u> UPL species <u>10</u> x 5 = <u>50</u> Column Totals: <u>210</u> (A) <u>729</u> (B) Prevalence Index = B/A = <u>3.47</u>
<u>39%</u> = Total Cover + 2 = 41%				
Herb Stratum (Plot size: <u>5' r</u>)				
1. <u>Hedera helix</u>	<u>95%</u>	<u>Yes</u>	<u>FACU</u>	
2. <u>Polypogon monspeliensis</u>	<u>5%</u>	<u>No</u>	<u>FACW</u>	
3. <u>Equisetum arvense</u>	<u>1%</u>	<u>No</u>	<u>FAC</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>101%</u> = Total Cover				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ¹ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants ¹ _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present.
Woody Vine Stratum (Plot size: <u>10' r</u>)				
1. <u>Rubus ursinus</u>	<u>5%</u>	<u>Yes</u>	<u>FACU</u>	
2. <u>Rubus armeniacus</u>	<u>5%</u>	<u>Yes</u>	<u>FAC</u>	
<u>10%</u> = Total Cover				
% Bare Ground in Herb Stratum <u>0%</u>				
Remarks: Sapling/Shrub Stratum also has 1% each <i>Thuja plicata</i> (FAC) and <i>Cornus alba</i> (FACW)				
Entered by: <u>KL</u> QC by: <u>cmw</u>				

SOIL

Sampling Point: **P8**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 3/2	100					SiL	
4-14+	10YR 4/1	98	10YR 4/6	2	C	M	gr SiL	and rounded cobbles

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)		³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)		

Restrictive Layer (if present):	
Type: <u>None</u>	
Depth (inches): <u>N/A</u>	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

Remarks: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Frost-Heave Hummocks (D7)

Field Observations:	
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	
(includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Moist throughout. Entered by: KL QC by: cmw

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Harmony Road Townhomes City/County: Milwaukie / Clackamas Sampling Date: 12/5/2017
 Applicant/Owner: Cascadia Planning & Dev. Svcs/Old Time Investments, Inc. State: OR Sampling Point: P9
 Investigator(s): C. Mirth Walker, Tom Dee Section, Township, Range: 31D, T1S, R2E, TL 2200
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 2
 Subregion (LRR): A, Northwest Forests and Coast Lat: _____ Long: _____ Datum: NAD 1983
 Soil Map Unit Name: Wapato silty clay loam (84) NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>	
Wetland Hydrology Present?	Yes <u>X</u>	No _____	
Precipitation prior to fieldwork: <u>3.48 inches 2 weeks prior (Portland); 1.94" above normal WYTD; 11.73" above normal CYTD.</u>			
Remarks: <u>NE corner of site.</u>			

VEGETATION

Tree Stratum (Plot size: <u>30' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Populus balsamifera</u>	<u>70%</u>	<u>Yes</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
<u>70%</u> = Total Cover				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50%</u> (A/B)
Sapling/Shrub Stratum (Plot size: <u>10' r</u>)				
1. <u>Symphoricarpos albus</u>	<u>20%</u>	<u>Yes</u>	<u>FACU</u>	
2. <u>Crataegus monogyna</u>	<u>10%</u>	<u>Yes</u>	<u>FAC</u>	
3. <u>Physocarpus capitatus</u>	<u>5%</u>	<u>No</u>	<u>FACW</u>	
4. <u>Fraxinus latifolia</u>	<u>5%</u>	<u>No</u>	<u>FACW</u>	
5. <u>Thuja plicata</u>	<u>4%</u>	<u>No</u>	<u>FAC</u>	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>15</u> x 2 = <u>30</u> FAC species <u>89</u> x 3 = <u>267</u> FACU species <u>120</u> x 4 = <u>480</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>224</u> (A) <u>777</u> (B) Prevalence Index = B/A = <u>3.47</u>
<u>44%</u> = Total Cover + 1 = <u>45%</u>				
Herb Stratum (Plot size: <u>5' r</u>)				
1. <u>Hedera helix</u>	<u>95%</u>	<u>Yes</u>	<u>FACU</u>	
2. <u>Juncus patens</u>	<u>5%</u>	<u>No</u>	<u>FACW</u>	
3. <u>Equisetum arvense</u>	<u>5%</u>	<u>No</u>	<u>FAC</u>	
4. <u>Polystichum munitum</u>	<u>5%</u>	<u>No</u>	<u>FACU</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>110%</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>10' r</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
<u>0%</u> = Total Cover				
% Bare Ground in Herb Stratum <u>0%</u>				
Entered by: <u>KL</u> QC by: <u>cmw</u>				
Remarks: <u>Ilex aquifolium 1% FACU in S/S Stratum.</u>				

SOIL

Sampling Point: **P9**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	10YR 4/1	99	10YR 4/6	1	C	M	SiL	Rounded cobbles

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)		
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)		

Restrictive Layer (if present): Type: <u>Rock refusal</u> Depth (inches): <u>12</u>	Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
--	---

Remarks: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)
 Tiny shard of broken glass in pit. Very rocky.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	Secondary Indicators (2 or more required) <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) <input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) <input type="checkbox"/> Frost-Heave Hummocks (D7)

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u> </u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>6</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
--	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Entered by: KL QC by: cmw
 Winter High Water Table; dam/weir on Minthorn Creek may back-up water into soil. Very slight small depression, not a linear feature, no geomorphic position.

ATTACHMENT B:

SITE VEGETATION LIST

**6115 SE Harmony Road
Site Vegetation List
August 25, 2016, and October 17 and December 5, 2017**

Common Name	Scientific Name	Wetland Indicator Status	Native and Invasive, Noxious
NATIVE			
grand fir	<i>Abies grandis</i>	FACU	native
big-leaf maple	<i>Acer macrophyllum</i>	FACU	native
red alder	<i>Alnus rubra</i>	FAC	native
devil's-pitchfork	<i>Bidens frondosa</i>	FACW	native
taper-fruit short-scale sedge	<i>Carex leptopoda</i>	FAC	native
red osier dogwood	<i>Cornus alba</i>	FACW	native
beaked hazelnut	<i>Corylus cornuta</i>	FACU	native
field horsetail	<i>Equisetum arvense</i>	FAC	native
Oregon ash	<i>Fraxinus latifolia</i>	FACW	native
sticky-willy	<i>Galium aparine</i>	FACU	native
lamp rush	<i>Juncus effusus</i>	FACW	native
spreading rush	<i>Juncus patens</i>	FACW	native
yellow-skunk-cabbage	<i>Lysichiton americanus</i>	OBL	native
American wild mint	<i>Mentha arvensis</i>	FACW	native
Pacific ninebark	<i>Physocarpus capitatus</i>	FACW	native
western or pineland sword fern	<i>Polystichum munitum</i>	FACU	native
balsam poplar (black cottonwood)	<i>Populus balsamifera</i>	FAC	native
Oregon white oak	<i>Quercus garryana</i>	FACU	native
white-stem raspberry	<i>Rubus leucodermis</i>	FACU	native
California dewberry	<i>Rubus ursinus</i>	FACU	native
Pacific willow	<i>Salix lasiandra</i>	FACW	native
giant sequoia	<i>Sequoiadendron giganteum</i>	NOL	native (to California)
common snowberry	<i>Symphoricarpos albus</i>	FACU	native
western arborvitae (western red cedar)	<i>Thuja plicata</i>	FAC	native
squashberry	<i>Viburnum edule</i>	FACW	native
NON-NATIVE			
horse chestnut*	<i>unknown species</i>	unknown species	unknown species
colonial bent	<i>Agrostis capillaris</i>	FAC	non-native
English hawthorn*	<i>Crataegus monogyna</i>	FAC	non-native
English ivy*	<i>Hedera helix</i>	FACU	invasive, noxious
English holly*	<i>Ilex aquifolium</i>	FACU	non-native
spotted touch-me-not	<i>Impatiens capensis</i>	FACW	non-native
pale-yellow iris (yellow flag)*	<i>Iris pseudacorus</i>	OBL	noxious
European privet*	<i>Ligustrum vulgare</i>	FACU	non-native
perennial rye grass	<i>Lolium perenne</i>	FAC	non-native
dawn redwood	<i>Metasequoia glyptostroboides</i>	NOL	non-native
Portuguese laurel*	<i>Prunus lusitanica</i>	NOL	non-native
English laurel*	<i>Prunus laurocerasus</i>	NOL	non-native
creeping buttercup	<i>Ranunculus repens</i>	FAC	non-native
Himalayan blackberry*	<i>Rubus armeniacus</i>	FAC	invasive, noxious
thornless blackberry	<i>Rubus species</i>	-	non-native
climbing (bittersweet) nightshade*	<i>Solanum dulcamara</i>	FAC	invasive
NATIVE STATUS UNKNOWN			
knotweed or smartweed	<i>Polygonum species</i>	OBL to NOL	-
rose	<i>Rosa species</i>	FAC to UPL	-

*Priority target non-native species for removal; all are on the City of Portland Nuisance Plant List.

Wetland Indicator Status and taxonomy for the Western Mountains, Valleys, and Coast Region per the National Wetland Plant List 2016 v3.3.

Accessed May 3, 2016.

<http://rsgisias.crrel.usace.army.mil/NWPL/>

Portland Plant List. Available at:

<https://www.portlandoregon.gov/citycode/article/322280>

Accessed September 22, 2016 and November 7, 2017

WETLAND INDICATOR STATUS (WIS)	
OBL	Obligate Wetland Plant – Almost always occurs in wetlands (hydrophyte), rarely in uplands
FACW	Facultative Wetland Plant - Usually occur in wetlands (hydrophyte), but may occur found in non-wetlands
FAC	Facultative Plant – Occurs in wetlands (hydrophyte) and uplands (nonhydrophyte)
FACU	Facultative Upland Plant - Usually occur in non-wetlands (non-hydrophyte), but may occur in wetlands
UPL	Upland Plant - Almost always occurs in uplands (non-hydrophyte), almost never occurs in wetlands. UPL plants have a WIS in other regions
NOL	Not Listed - Plants that are not on the National Wetland Plant List are assumed to be UPL and have no WIS in any region

ATTACHMENT C:

REPRESENTATIVE SITE PHOTOGRAPHS



Photo 1. View north of western portion of vegetated corridor. Photo date October 17, 2017.



Photo 2. View north of central portion of vegetated corridor. Photo date October 17, 2017.



Photo 3. View north of eastern portion of vegetated corridor. Photo date October 17, 2017.



Photo 4. View east of lot. Photo date October 17, 2017.



Photo 5. View northwest of manhole. Photo date August 25, 2016.



Photo 6. View west of typical condition vegetated corridor. Photo date October 17, 2017.



Photo 7. View north of Plot 6, below ordinary high water line of Minthorn Creek. Photo date October 17, 2017.



Photo 8. View northeast of Minthorn Creek from eastern property line. Photo date October 17, 2017.

ATTACHMENT D:

OFWAM DATA FORMS



**OREGON
FRESHWATER
WETLAND
ASSESSMENT
METHODOLOGY**



Oregon

Freshwater Wetland Assessment Methodology

Prepared by:

Emily Roth

Natural Resources Conservation Service

Richard Olsen

Argonne National Laboratory

(formerly with the Oregon Department of Environment Quality)

Patty Snow

Oregon Department of Fish and Wildlife

Richard Sumner

U.S. Environmental Protection Agency

Editing, graphics and layout by Scott McCannell. Cover design by Frank Roth and cover illustration by Sandra Noel.

The preparation of this manual was supported in part by a grant from the U.S. Environmental Protection Agency—Region X.

This manual is published by: Wetlands Program
Oregon Division of State Lands
775 Summer St. NE
Salem, OR 97310



Revised Edition, April 1996

The origins of this manual

The template for this evaluation method, the *Method for the Comparative Evaluation of Nontidal Wetlands in New Hampshire*, was published in 1991 by the New Hampshire Department of Environmental Services. The New Hampshire method was based on a similar method developed by the Connecticut Department of Environmental Protection. The *Oregon Freshwater Wetland Assessment Methodology* uses some of the same wetland functions developed in the previous two publications. A general wetland characterization, a wetlands of special interest for protection category, and sensitivity to impacts and enhancement potential sections have been added. Some functions used in the New Hampshire or Connecticut methodologies have been combined or removed. All were modified to reflect wetland types found in Oregon. The revised edition clarifies and rearranges some questions, directions and answers found in the December 1993 edition.

The methodology was written by an inter-agency group that worked together for two and a half years. The size and make-up of the group fluctuated, but the following people and other representatives from their agencies were authors of various sections:

Emily Roth

Oregon Division of State Lands

Patty Snow

Oregon Department of Fish and Wildlife

Richard Olsen (and Mike Nixon)

Oregon Department of Environmental Quality

Richard Sumner

U.S. Environmental Protection Agency, Corvallis

A July 1993 draft of the Oregon Method was field tested in four areas of the state located within Clatsop, Linn, Benton and Deschutes counties and the Portland metropolitan area. In each area, a group of wetlands experts selected an assortment of familiar wetlands. They evaluated the functions of each wetland based upon their best professional judgment. We then brought together a second group of individuals, including community planners and interested community members. They visited some of the same wetlands and conducted an evaluation using the Oregon Method. The results of their evaluation were then compared to those of the expert group. We used the information from the comparison test to refine the final document.

This edition of the *Oregon Freshwater Wetland Assessment Methodology* is a modification of the original. Changes reflect suggestions of numerous users. We appreciate any comments or suggestions you have concerning the methodology. Suggestions will be evaluated and incorporated into future editions.

Submit comments concerning the methodology or requests for additional copies of this manual to:

Wetlands Program
Oregon Division of State Lands
775 Summer St. N.E.
Salem, OR 97310
(503) 378-3805

The development of this methodology was funded in part by a grant from the U.S. Environmental Protection Agency.

The Oregon Method should be cited as follows:

Roth, E.M., R.D. Olsen, P.L. Snow, and R.R. Sumner. 1993.
Oregon Freshwater Wetland Assessment Methodology. Ed. by
S.G. McCannell. Oregon Division of State Lands. Salem, OR.

Acknowledgments: second edition

The Oregon Freshwater Wetland Methodology had been in use for almost two years, at least two growing seasons, when we started these revisions. Coastal, central, eastern, Willamette Valley, and southern Oregon wetlands were assessed for either wetland inventories or training sessions. We learned that some clarifications needed to be made and responses simplified, but luckily, no one encountered any fatal flaws.

The revisions were made possible due to the invaluable critique and reasonable suggestions from:

- Lisa Heigh, a graduate student at Oregon State University, who put it through a consistency test, using it as a basis for her masters project.
- The consultant community, our main users, who gave feedback on both clarification and scientific value. I would especially like to thank Mirth Walker and Christie Galen of Fishman Environmental Services and John van Staveren of Pacific Habitat Services.
- Richard Sumner, one of the principal authors and grant wizard extraordinaire at EPA's Corvallis laboratory.

Numerous others also suggested revisions that helped make the second edition more user friendly. They included EnviroCorps members, various people who braved our wetland identification and assessment trainings, and citizen users. I thank them all "en masse."

These revisions would not have been undertaken if it wasn't for Janet Morlan with the Oregon Division of State Lands and Ken Bierly, now working in the Governor's Office on Watershed Health (taking a breather from the Division). Without their subtle yet consistent prodding, I would never have attempted and completed the revisions. They help me keep at least one of my feet mired in the wetland mucks of Oregon. Thanks Janet and Ken.

My final thanks goes to the editor, Scott McCannell. As with the original, his patience persisted with my delays, revisions and the contracting process.

Cheers!

Emily Roth
NRCS/Community Resource Conservation Center
March 1996

Acknowledgments: first edition

The inter-agency working team consisted of more than just the authors. We would like to give a special thanks to Frank Flynn and Lynn Beaton with the Oregon Department of Land Conservation and Development, Jim Goudzwaard with the U.S. Army Corps of Engineers—Portland District, and Steve Morris and Michelle Day with the U.S. National Marine fisheries Service for attending meetings, reviewing numerous drafts of the text and providing valuable input throughout the entire process. We would also like to thank Bob Frenkel, Marv Yoshinaka, Peggy Elting, Rosemary Furfey, John Christy, and Tom Robertson for their participation in the process. For various reasons, they could not continue through the entire development of the manual, but their contributions helped to strengthen the methodology.

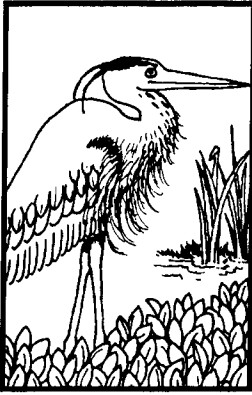
We relied on Karen Strohmeier, Rosemary Furfey, Neil Maine, Steve Moser and Dave Leslie to organize our field testing groups. Their efforts and feedback made the methodology more user friendly and led to many revisions. Lynn Putnam assisted the inter-agency group with the initial testing. She endured the “group process” and even managed to out shout us a few times. Also, a special thanks to all the people who participated in the field testing; they are too numerous to list here.

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Cheers!

Emily Roth
Oregon Division of State Lands
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Wildlife habitat

Wetlands provide habitat for many wildlife species. A single wetland often cannot satisfy all requirements for wildlife use, so its proximity to other bodies of water or upland areas is important. Buffers and corridors are also essential for this reason, and they reduce human disturbance as well. Many species also have special habitat requirements: Good water quality is necessary for amphibians and mammals; structural diversity is important for birds; and a combination of open water and grazing areas is important for waterfowl.

For this assessment, **urban wetlands are those within urban growth boundaries or urban or rural service areas.** Because of the impacts of human activities, urban wetlands may not satisfy as many habitat requirements as wetlands in undeveloped areas. This should not be interpreted to mean that urban wetlands have limited value for all wildlife. The importance of an urban wetland may be increased because of its location and surroundings.

Assessment questions

Question 1

How many Cowardin wetland classes are present?

Directions

See question 21 in the Wetland Characterization. Count only those Cowardin classes for which you answered “a,” “b” or “c.” For urban areas, also consider the mix of species (Question 22 in the Wetland Characterization.)

Rural areas:

- Three or four.
- Two.
- One.

Urban areas:

- Two or more.
- One class with more than five plant species.
- One class with five or fewer plant species.

Notes

a. PFO and PEM, PAB

Rationale

In Northwest wetlands, vegetation is the most important component of wildlife habitat. It is widely recognized that plant community diversity increases animal community diversity. The existence of two Cowardin classes adjacent to each other may also improve wildlife habitat value because some wetland wildlife species use the edge between plant communities. (“Edge” describes the border between vegetation types or between a vegetation type and open water.)

Structural diversity is also important. If several layers of vegetation are present, more diverse habitat types are provided. (Different birds nest in different layers.) In addition, the number of layers affects the amount of natural debris, which is necessary for amphibians and other wildlife.

Question 2

What is the dominant wetland vegetation cover type?

- a. Woody vegetation.
- b. Emergent vegetation and ponding, or open water only.
- c. Emergent vegetation or wet meadow.

Directions

See question 23 in the Wetland Characterization.

Rationale

Wooded and shrub wetlands provide habitat for the largest overall species assemblages. Emergent wetlands associated with open water are also an essential habitat for a large number of wetland species, particularly waterfowl, amphibians and wading birds. Emergent wetlands without open water provide habitat for wetland species to a lesser degree.

Question 3

What is the degree of Cowardin class interspersion for the wetland being observed?

- a. High.
- b. Moderate.
- c. Low.

Directions

See question 24 in the Wetland Characterization.

Rationale

Interspersion occurs when two or more wetland types or upland inclusions create a mosaic or pattern. In a wetland composed of approximately concentric bands of vegetation, such as cattails ringed by shrubs, interspersion is low. At the opposite extreme, small patches of shrubs scattered throughout an emergent marsh represent a high degree of interspersion.

When two or more vegetation types are highly interspersed, a great deal of edge is created. Edge is important because many wildlife species are edge dwellers. Generally, the greater the edge, the greater the diversity of wildlife.

Notes

a.

b.

Question 4

If the wetland contains unvegetated open water, how many acres of unvegetated open water are present?

Directions

See question 28 in the Wetland Characterization.

Rural areas:

- More than 3 acres .
- Between 0.5 and 3 acres.
- Less than 0.5 acres.

Urban areas:

- More than 1 acre.
- Between 0.5 and 1 acre.
- Less than 0.5 acres.

Notes

c.

Rationale

Open water is essential to a number of wetland wildlife species, including waterfowl, wading birds, amphibians and some reptiles.

Question 5

How is the wetland connected to another body of water, such as a stream, lake or pond?

Directions

See question 18 in the Wetland Characterization.

- The wetland is connected by surface water to another body of water.
- No surface water connection exists to another body of water, but other bodies of water lie within 1 mile of the wetland.
- No surface-water connection exists to another body of water, and no other bodies of water lie within 1 mile of the wetland.

a.

Rationale

Wetland wildlife species will often use surface water to travel between a wetland and deep water. Also, water must be available during critical phases for the wildlife that use it. Water available during the nesting season is more valuable to wildlife than water available only during the winter.

Question 6 (for Western OR only)

How is the wetland connected to other wetlands?

Directions

See question 27 in the Wetland Characterization.

- a. Connected to other wetlands within a 3-mile radius by a perennial or intermittent stream, irrigation or drainage ditch, culvert, canal or lake.
- b. Not connected by surface waters, but other unconnected wetlands lie within a 3-mile radius.
- c. Not connected to other wetlands by surface waters, and no other unconnected wetlands lie within a 3-mile radius.

Rationale

Proximity to other wetlands increases a wetland's utility as habitat. Nearby wetlands sometimes contain features absent from the assessment wetland. For example, birds such as the great blue heron may roost near one wetland but travel to another to fish if the wetland where they roost doesn't have an ample supply of fish.

This criterion applies only in western Oregon. Because of the dry climate in eastern Oregon, isolated wetlands provide important habitat to both local and migratory species.

Notes

a.

Question 7

What is the water quality condition of stream reaches in the watershed upstream of the wetland or adjacent to the wetland?

Directions

See questions 7 and 8 in the Wetland Characterization. If both "a" and "b" apply, choose "a."

- a. No upstream or adjacent reaches are listed as *water quality limited*, and all upstream or adjacent reaches are listed as *no problem* (or no data available) for nonpoint source pollutants.
- b. One or more upstream or adjacent reaches are listed in *moderate* water quality condition for nonpoint source pollutants.
- c. One or more upstream or adjacent reaches are listed as *water quality limited* or in *severe* water quality condition for nonpoint source pollutants.

Rationale

Poor water quality can harm many terrestrial and aquatic species. The character of a wetland ecosystem can change when exposed to nutrients and other chemicals beyond tolerable limits. Excess nutrients, for example, can cause oxygen deficiencies, which in turn can cause a change in the species composition of both plant and animal communities. Studies in Washington and elsewhere have indicated that amphibians are especially sensitive to water quality.

b.

Question 8

What is the dominant existing land use within 500 feet of the wetland's edge?

- a. Exclusive Forest Use or Open Space.
- b. Agriculture.
- c. Developed uses.

Directions

See question 15 in the Wetland Characterization. If the responses you gave to question 15 in the Characterization indicate that two or more land-use categories are equally dominant, pick the one that will yield the lowest letter response for this question. (Example: In question 15 of the Wetland Characterization, you responded "b. Between 20% and 50%" to both *Exclusive Forest Use lands* and *developed uses*, and the remainder of your responses to question 15 were "a. Less than 20%." For this Wildlife Habitat question, you would respond "a. Exclusive Forest Use or Open Space.")

Rationale

Wildlife habitat generally deteriorates as land use changes from forested land to agricultural land to urban land. Certain game species, such as deer and some waterfowl, may benefit from land clearing. However, the majority of wildlife species are affected adversely when the land is developed because of fencing, lighting and loss of habitat.

Notes

c.

Question 9a

For **rural areas**: What percentage of the wetland's edge is bordered by upland wildlife habitat that is at least 150 feet wide?

- a. Greater than 40%.
- b. Between 10% and 40%.
- c. Less than 10%.

Question 9b

For **urban areas**: What percent of the wetland's edge is bordered by a vegetative buffer at least 25 feet wide?

- a. Greater than 40%.
- b. Between 10 and 40%.
- c. Less than 10%.

Directions

For rural areas, see question 25 in the Wetland Characterization. For urban areas, see question 26 in the Wetland Characterization.

Rationale

A buffer zone, an uncut or undisturbed area of vegetation providing wildlife cover, increases a wetland's wildlife habitat potential. It provides habitat for both upland animals and wetland dependent species that require upland habitat for parts of their life cycle. A buffer zone also decreases the impacts of disturbance on the wetland. This is particularly important for nesting birds, which may be disturbed by people and household pets.

Well-vegetated buffer areas and corridors are particularly significant in urban areas because of their beneficial effect on water quality as well as their value for wildlife.

Notes

a.

Wildlife habitat: assessment criteria

The wetland provides diverse wildlife habitat if:	At least four questions are answered "a," and no more than one is answered "c."
The wetland provides habitat for some wildlife species if:	Answers do not satisfy the above- or below-listed criteria.
The wetland's wildlife habitat function is lost or not present if:	All questions are answered "c."

The wetland provides habitat for some species.



Fish habitat

This index assesses the contribution of wetlands connected to streams, rivers, lakes or ponds to fish habitat. **or this index, “connected to” implies a surface-water connection.** The assessment should be done on the reach of the stream or on a section of lake that actually borders the wetland or is contained within the wetland.

A stream is defined as a waterbody with a distinct channel and flow. Examples include sloughs, perennial streams and intermittent streams. If dikes or berms have been built on the stream banks between the stream and wetland that do not allow continual exchange of surface water, do not complete this index. If both a stream and lake are present, choose the one with the longest wetland surface connection.

Wetlands that contribute to habitat for fish include areas with dense, overhanging vegetation. This vegetation provides shade, cover and food sources to related waterways and lakes. Wetlands also provide spawning, rearing and resting opportunities for fish. However, a wetland need not actually contain fish to contribute to fish habitat because wetlands may perform important functions for fish-bearing waters downstream.

The assessment of fish habitat is divided into two parts. Part A evaluates the wetland habitat connected to rivers and streams. If there is no stream or river associated with the wetland, then leave Part A out of the assessment. Part B evaluates the wetland habitat connected to ponds (water greater than 6 feet deep) and lakes. If there is no lake or pond connected to the wetland, then leave Part B out of the assessment. If no stream, river, pond or lake is connected to the wetland, then leave this index out of the assessment altogether.

Notes

Assessment questions: Part A—streams

Notes

Question 1

What percentage of the stream is shaded by stream-side (riparian) vegetation?

- Western Oregon:*
- a. More than 75%.
 - b. Between 50% and 75%.
 - c. Less than 50%.

a.

Directions

See question 31 in the Wetland Characterization.

- Eastern Oregon:*
- a. 50% or more.
 - b. 25% or more, but less than 50%.
 - c. Less than 25%.

Rationale

Many Oregon streams are unsuitable for anadromous and resident fish because riparian vegetation has been cleared. High water temperatures that result from removal of stream-side vegetation can make a stream unsuitable for some fish species. Salmonids and some resident fish are particularly susceptible to elevated water temperatures. The amount and type of stream-bank cover also affects the amount of large woody debris in the stream or river system. In addition, stream-bank vegetation provides habitat for insects, an important food source for salmonids.

Question 2

What is the physical character of the stream channel?

- a. The stream is in a natural channel, or modified portions of the stream are returning to a natural channel.
- b. Only portions of the stream channel are modified.
- c. The stream is extensively modified or confined in a non-vegetated channel or pipe.

b.

Rationale

Although the species or age composition of low- and high-gradient streams is different, both can provide habitat for fish. Artificially channelized or extensively modified streams, however, usually do not provide fish habitat as well as natural stream channels.

Question 3

What percentage of the entire stream contains instream structures such as large woody debris, floating submerged vegetation, large rocks or boulders?

- a. More than 25%.
- b. Between 10% and 25%.
- c. Less than 10%.

Directions

See question 32 in the Wetland Characterization.

Rationale

Cover is essential for good fish habitat. It provides refuge from predators and serves as substrate for insect larva, which are a good food source for some fish species. The presence of large pieces of woody material in pools is essential for providing adequate winter habitat for salmonid species. In addition, large pieces of woody material contribute to bank stability, dissipate energy, generate pool formation and encourage meandering. The breakdown of this material is also important in the nutrient cycle of the stream or river.

Question 4

What is the water quality condition of stream reaches in the watershed upstream of the wetland or adjacent to the wetland?

- a. No upstream or adjacent reaches are listed as *water quality limited*, and all upstream or adjacent reaches are listed as *no problem* (or no data available) for nonpoint source pollutants.
- b. One or more upstream or adjacent reaches are listed in *moderate* water quality condition for nonpoint source pollutants.
- c. One or more upstream or adjacent reaches are listed as *water quality limited* or in *severe* water quality condition for nonpoint source pollutants.

Directions

See questions 7 and 8 in the Wetland Characterization. If both "a" and "b" apply, choose "a."

Rationale

Poor water quality can harm many aquatic species. The whole character of a wetland ecosystem can change when it is exposed to nutrients and other chemicals beyond tolerable limits. Excess nutrients, for example, can cause oxygen deficiencies, which in turn can cause a species composition change in both plant and animal communities.

Notes

b.

b.

Question 5

What is the dominant existing land use within 500 feet of the wetland's edge?

- a. Exclusive Forest Use or Open Space.
- b. Agriculture.
- c. Developed uses.

Directions

Refer to the directions for question 8 of the wildlife habitat assessment questions.

Rationale

Fish habitat generally deteriorates as land use becomes more intensive, e.g., changes from forested land to agricultural land (including rangeland) to urban land. The change in intensity often changes the structure of the habitat and increases runoff, pollutant loading and sedimentation.

Question 6

Are fish present in a stream, lake or pond associated with the wetland?

- a. Salmon, trout or sensitive species are present at some time during the year.
- b. Species not covered in "a" are present at some time during the year.
- c. No species are present at any time during the year.

Directions

See question 29 in the Wetland Characterization.

Rationale

The potential for a wetland to benefit fish is directly related to the presence of fish in the stream or river reach within or adjacent to the wetland.

Part B—lakes and ponds

Question 1

Does the lake or pond contain areas of both deep and shallow water?

- a. Yes.
- b. Cannot be determined.
- c. No.

Directions

See question 33 in the Wetland Characterization.

Rationale

The depth of the pond or lake is important for spawning and may be important for rearing. A mixture of shallow, medium and deeper water is optimum to provide different habitat types.

Notes

c.

b. or c.

Minthorn Creek is not shown on the StreamNet mapper website. (<http://psmfc.maps.arcgis.com/apps/webappviewer/index.html?id=3be91b0a32a9488a901c3885bbfc2b0b>)

Question 2

What percentage of the wetland complex contains cover objects such as submerged logs, floating or submerged vegetation, large rocks or boulders?

- a. More than 25%.
- b. Between 10% and 25%.
- c. Less than 10%.

Directions

See question 35 in the Wetland Characterization.

Rationale

Cover is essential for good fish habitat. It provides refuge from predators and serves as substrate for insect larva, which are a food source for some fish species. The presence of large pieces of woody material in wetlands is essential for providing adequate winter habitat for salmonid species. In addition, large pieces of woody material contribute to bank stability and dissipate energy. The breakdown of this material is also important in the nutrient cycle of the pond or lake.

Question 3

What percentage of the shoreline is shaded at the water's edge by forested or scrub-shrub vegetation?

- a. 60% or more.
- b. 20% or more, but less than 60%.
- c. Less than 20%.

Directions

See question 34 in the Wetland Characterization.

Rationale

Shoreline cover provides shading, which moderates water temperature in lakes and ponds. High water temperatures that result from removal of lake-side vegetation can make a lake unsuitable for some fish species. Shoreline vegetation also provides food, large pieces of woody debris and cover from predators. Woodland and scrubland vegetation provides more shading than herbaceous vegetation.

Notes

Question 4

What is the water quality condition of stream reaches in the watershed upstream of the wetland or adjacent to the wetland?

Directions

See questions 7 and 8 in the Wetland Characterization. If both "a" and "b" apply, choose "a."

- a. No upstream or adjacent reaches are listed as *water quality limited*, and all upstream or adjacent reaches are listed as *no problem* (or no data available) for nonpoint source pollutants.
- b. One or more upstream or adjacent reaches are listed in *moderate* water quality condition for nonpoint source pollutants.
- c. One or more upstream or adjacent reaches are listed as *water quality limited* or in *severe* water quality condition for nonpoint source pollutants.

Rationale

See Part A question 4.

Question 5

What is the dominant existing land use within 500 feet of the wetland's edge?

Directions

Refer to the directions for question 8 of the wildlife habitat assessment questions.

- a. Exclusive Forest Use or Open Space.
- b. Agriculture.
- c. Developed uses.

Rationale

See Part A question 5.

Question 6

Are fish in a stream, lake or pond associated with the wetland?

Directions

See question 29 in the Wetland Characterization.

- a. Salmon, trout or sensitive species are present at some time during the year.
- b. Species not covered in "a" are present at some time during the year.
- c. No species are present at any time during the year.

Rationale

The potential for a wetland to benefit fish is directly related to the presence of fish in the pond or lake.

Fish habitat: assessment criteria

The wetland's fish habitat function is intact if:

Any three questions are answered "a," and no more than one is answered "c."

The wetland's fish habitat function is impacted or degraded if:

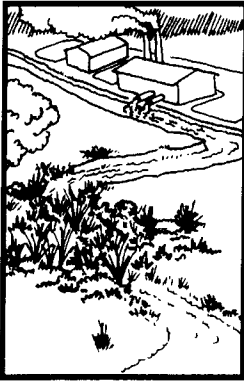
Answers do not satisfy the above- or below-listed criteria.

The wetland's fish habitat function is lost or not present if:

All questions are answered "c."

Notes

Fish habitat is impacted or degraded.



Water quality (pollutant removal)

Sediment trapping

During periods of heavy rainfall, water runoff may cause erosion and increase solids suspended in receiving surface waters. The excess sediment entering water systems can damage aquatic ecosystems. For example, sediment accumulation in stream bottoms can smother spawning areas and kill aquatic insect larvae. It can also reduce the storage capacity of downstream water supply reservoirs.

Wetlands perform an important function by trapping sediment from waters that pass through them. As water flows through wetlands, it is slowed by vegetation, and sediment settles to the bottom before the water moves farther downstream. As much as 90% of the solids suspended in the water may be removed as the water moves through wetlands, resulting in cleaner water entering streams, rivers, lakes and estuaries.

Nutrient attenuation

Nitrogen and phosphorus are the two nutrients most often associated with water pollution. They are also main ingredients of fertilizers used on agricultural fields and lawns, and both are found in high concentrations in discharges from sewage treatment plants and livestock operations. Excessive amounts of nitrogen and phosphorus in lakes and slow-moving streams can cause algal blooms and subsequent oxygen deficiencies, which may kill fish and reduce water quality. The processes that occur as a result of excess nutrients are lumped together under the term “eutrophication.” Within limits, wetlands can reduce nutrient levels so that the effects of eutrophication on downstream areas are prevented or reduced. This index considers only point and non-point pollutant sources that are due to land uses in the watershed.

Assessment questions

Question 1

What is the wetland’s primary source of water?

- Surface flow, including streams and ditches.
- Precipitation or sheet flow.
- Groundwater, including seeps and springs.

a.

Directions

See question 36 in the Wetland Characterization.

Rationale

Wetlands bordering a perennial or intermittent stream or lake are areas into which floodwaters spread during periods of high runoff, enabling the wetlands to remove pollutants.

Notes

Question 2

- Is there evidence of flooding or ponding during a portion of the growing season?
- a. Yes.
 - b. Unable to determine or not applicable.
 - c. No.

Directions

See question 37 in the Wetland Characterization.

Rationale

Water level fluctuation in the wetland indicates the ability to retain water. Impounded or standing water acts as a sediment trap because it greatly slows the flow of the incoming water, allowing suspended solids to settle out. Additionally, the slower velocity increases the contact time of the water with vegetation, resulting in uptake of nutrients by the vegetation. These actions function to reduce pollutant loads.

Question 3

- What is the degree of wetland vegetation cover?
- a. High (greater than 60%).
 - b. Moderate (approximately 60%).
 - c. Low (less than 60%).

Directions

See question 21 in the Wetland Characterization. Add the lower end of the ranges for forest, scrub-shrub and emergent vegetation to get the result. If the result is 60% or more, answer "high." If the result is 60%, answer "moderate." Answer "low" for other results.

Rationale

The more dense the vegetation, the greater the wetland's ability to take up nutrients. A dense stand of persistent emergent plants (such as cattail and rush) along with floating and submerged aquatics would tend to provide maximum nutrient uptake during the growing season. Wooded and scrub-shrub wetlands remove nutrients mainly through settling of suspended solids in runoff and flood waters.

Notes

a.

a.

Question 4

What is the wetland's area in acres?

Directions

See questions 17 and 27 in the Wetland Characterization.

- a. More than 5 acres.
- b. Between 0.5 acres and 5 acres; or wetland area is less than 0.5 acres, and the wetland is connected to other wetlands within a 3-mile radius by a perennial or intermittent stream, irrigation or drainage ditch, canal or lake.
- c. Less than 0.5 acres, and the wetland is not connected to other wetlands within a 3-mile radius by a perennial or intermittent stream, irrigation or drainage ditch, canal or lake.

Rationale

The larger the wetland, the greater its capacity and ability to filter pollutants. Small wetlands connected by surface water act as a series of filters and thus function similarly to a larger wetland.

Question 5

What is the dominant, existing land use within 500 feet of the wetland's edge?

Directions

Refer to the directions for question 8 of the wildlife habitat assessment questions.

- a. Developed uses.
- b. Agriculture.
- c. Exclusive Forest Use or Open Space.

Rationale

Urbanized areas have more impervious surface areas and concentrate pollution sources. Wetlands in urban areas are important for filtering the runoff water before it enters a stream.

Notes

b.

a.

Question 6

What is the water quality condition of stream reaches in the watershed upstream of the wetland or adjacent to the wetland?

Directions

See questions 7 and 8 in the Wetland Characterization. If both “a” and “b” apply, choose “a.”

- a. One or more upstream or adjacent reaches are listed as *water quality limited* or in *severe* water quality condition for nonpoint source pollutants.
- b. One or more upstream or adjacent reaches are listed in *moderate* water quality condition for nonpoint source pollutants.
- c. No upstream or adjacent reaches are listed as *water quality limited*, and all upstream or adjacent reaches are listed as *no problem* (or no data available) for nonpoint source pollutants.

Notes

b.

Rationale

A watershed with upstream pollutant loading sources needs wetlands to reduce pollutant levels in water before it is delivered downstream.

Water quality: assessment criteria

A wetland’s water-quality function is intact if:

Question 1 is answered “a” or “b,” questions 2 and 3 are answered “a,” and any other question is answered “a” or “b.”

A wetland’s water-quality function is impacted or degraded if:

Answers do not satisfy the above- or below-listed criteria.

A wetland’s water-quality function is lost or not present if:

Four out of six questions are answered “c.”

Water Quality is intact.



Hydrologic control (flood control & water supply)

Wetlands function as natural water-storage areas during periods of high runoff and stream flooding.

At times they act as flood regulators by holding floodwater then slowly releasing it downstream. This temporary storage reduces the amount of water downstream during floods, thereby reducing peak flows. Through this flood storage mechanism, wetlands associated with tributaries of streams or rivers can prevent water from all tributaries reaching the stream or river at the same time (this is called desynchronization). Wetlands can also act as floodwater “brakes.” For example, water flowing through riverine wetlands during floods is slowed by trees, shrubs, reeds, rushes and other wetland vegetation. Wetlands acting as brakes can reduce flood peaks and thereby reduce flood damage, bank and bed erosion, and other adverse effects caused by fast moving water.

Wetlands also have long-term water holding abilities. Wetlands may store water for longer periods, sometimes for months. The slow draining of these wetlands to surface water or ground water as the water level in the wetland recedes may contribute to maintenance of baseflows in streams hydrologically connected to the wetland. The ability of this long-term water storage to maintain stream flows is called “flow conservation.”

Assessment questions

Question 1

Is all or part of the wetland located within the 100-year floodplain or within an enclosed basin? a. Yes.
b. No.

Directions

See question 19 in the Wetland Characterization.

Rationale

Wetlands located within a floodplain or enclosed basin have a greater opportunity to receive and store water from surface flows and to release it slowly downstream or into the groundwater.

Notes

b.

Question 2

Is there evidence of flooding or ponding during a portion of the growing season?

- a. Yes.
- b. Unable to determine or not applicable.
- c. No.

Directions

See question 37 in the Wetland Characterization.

Rationale

Water marks are valid indicators of seasonal and episodic stage fluctuations in wetlands and, as such, are strong indicators of storage function.

Question 3

What is the wetland's area in acres?

- a. More than 5 acres.
- b. Between .5 acres and 5 acres.
- c. Less than .5 acres.

Directions

See question 17 in the Wetland Characterization.

Rationale

Generally, the larger the wetland, the greater its ability to store and attenuate flood flows.

Question 4

Is waterflow out of the wetland restricted (e.g., beaver dam, concrete structure, undersized culvert)?

- a. Yes, the outlet is restricted or the wetland has no outlet.
- b. Minor restrictions slow down the water (i.e., undersized culvert.)
- c. No, the outlet has unrestricted flow.

Directions

See question 38 in the Wetland Characterization.

Rationale

Wetlands with no outlets or with restricted or controlled outlets generally will store greater amounts of water than wetlands with unrestricted flow outlets. Also, the wetland can store water for slower release into the water system.

Notes

a.

c.

b.

Question 5

What is the dominant wetland vegetation cover type?

- a. Woody vegetation.
- b. Emergent vegetation and ponding, or open water only.
- c. Emergent vegetation or wet meadow.

Directions

See question 23 in the Wetland Characterization.

Rationale

Densely vegetated wetlands with vegetation greater than 6 feet tall are better able to control flood flows than wetlands dominated by open water or low growing vegetation, which generally offers little resistance.

Notes

a.

Question 6

What is the dominant existing land use, within 500 feet of the wetland on the downstream or down-slope edge of the wetland?

- a. Developed uses.
- b. Agriculture.
- c. Exclusive Forest Use and Open Space.

Directions

See question 16 in the Wetland Characterization.

Rationale

If the wetland is upstream from developed areas, its ability to control floods becomes more important.

a.

Question 7

What is the dominant land use in the watershed upstream from the assessment area?

- a. Urban or urbanizing.
- b. Agriculture.
- c. Forested or natural area.

Directions

See question 6 in the Wetland Characterization.

Rationale

Runoff volume is directly related to the level of development in the watershed. The more development, the more runoff. The opportunity for the wetland to provide flood control and flow conservation to a community is greater where runoff is greater.

a.

Hydrologic control: assessment criteria

A wetland's hydrologic control function is intact if:	Four or more questions are answered "a."
A wetland's hydrologic control function is impacted or degraded if:	Answers do not satisfy the above- or below-listed criteria.
A wetland's hydrologic control function is lost or not present if:	Four or more questions are answered "c."

Notes

Hydrologic Control is intact.

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steve@cascadiapd.com



MEMO

DATE: September 4, 2018

TO: Brett Kever, Associate Planner
City of Milwaukie

FROM: Steve Kay

RE: Supplemental Application Materials for
VR-2018-005, NR-2018-002, and DEV-2018-006

To address the Approvability Items identified in your letter dated August 24, 2018, we are providing supplementing information for the above-mentioned application. The applicant's response to each item is provided below:

Item 1a. There is a Discrepancy between the Water Quality Site Assessment and the Proposed Planting Information for VECO A1 on Sheet P-6.

Applicant's Response:

The proposed planting information provided on Sheet P-6 replaces what was previously presented in Table 2 of the Water Quality Site Assessment for VECO A1.

Item 1b. It is Unclear why Trees within the WQR that are not Directly within the Development Area are Proposed to be Removed.

Applicant's Response:

The critical tree root zone is typically 1.5-ft. radius around a tree for each 1" diameter measured at breast height (DBH). Sheet P-5 identifies existing trees which are 6" DBH or larger, therefore each of these trees has critical root zones that are 9-ft. or larger. The applicant's Preliminary Grading Plan illustrates where the proposed development

activities will occur. When those development activities are within 9-ft. of a tree, and at least 50% of the critical root zone area will be impacted, the damaged root zone will present a hazard if that tree is retained. As such, some trees which are located outside of the proposed development footprint, but have critical root systems which are impacted by the development, are proposed for removal.

Item 2a. *It is Unclear Whether Additional User Amenities are Proposed to be Provided within the Public Open Space Area.*

Applicant's Response:

All of the proposed user amenities are illustrated on the applicant's Preliminary Site Plan. The term "variety of user amenities" is referring to the proposed decomposed granite walking trail, benches, and the picnic table.

Item 2b. *An Additional Variance is Required if Permeable On-Site Walkways are Not Proposed with the Development.*

Applicant's Response:

To comply with MMC Subsection 19.504.9, the applicant has attached a revised Preliminary Site Plan that proposes the installation of permeable concrete on-site walkways throughout the development. As such, an additional variance request is not required for the application.

Item 2c. *Staff Asserts that Stone Veneer and Cedar-Shake Patterned Hardi Board do not Function to Create a Simple and Visually Interesting Building. It is Unclear How the Doors and Windows will be Inset to Provide Depth, Shadows, and Expression to the Building.*

Applicant's Response:

The attached Building Elevations have been revised to remove the stone veneer and cedar-shake patterned Hardi Board from the proposed multi-family structure. To provide depth, shadows, and expression to the building, the applicant is proposing to install 1 ½" thick trim around the proposed exterior doors and windows versus installing the industry standard 1" thick trim.

Item 2d. *More Detail is Required to Demonstrate that the Chain Link Fencing Meets the Building Materials Standards. Additional Detail is Requested for the Proposed Metal Fence and Gate along the Sidewalk. Staff Again Asserts that Stone Veneer and Cedar-Shake Patterned Hardi Board do not Function to Create a Simple and Visually Interesting Building.*

Applicant's Response:

The revised Preliminary Site Plan indicates that the applicant is no longer proposing chain link fencing. The applicant is now proposing to install 42" high black metal fencing on top of the proposed retaining wall. The same fencing is also proposed to be installed between the sidewalk along SE Harmony Road and the access drive for the apartment complex. Attached with this Memo is a picture of the proposed 42" fencing and a detail which illustrates the proposed gate for fire apparatus access. As explained above, the applicant has removed the stone veneer and cedar-shake patterned Hardi Board from the proposed apartment building.

Item 2e. It is Unclear What Percentage of Canopy-Coverage will be Provided for VECO A2.

Applicant's Response:

The applicant has revised Sheet P-6 to provide proposed plantings for VECO A2. The revised planting list will provide 37% canopy coverage within 5 years for this portion of the common open space area. The planting information provided on Sheet P-6 replaces what was previously presented in Table 3 of the Water Quality Site Assessment for VECO A2.

Item 2f. Staff Asserts that the Shared Waste Collection Area is not Conveniently Located for the Proposed Development. Additional Options Including Expansion of the Existing Collection Area Should be Explored.

Applicant's Response:

The applicant is proposing to provide a single shared waste and recycling storage area for the existing Harmony Park Townhomes at 5989 SE Harmony Road, and the proposed 15-unit apartment complex expansion at 6115 SE Harmony Road. The design guidelines listed under Table 19.505.3.D do not specify a maximum distance between the proposed dwelling units and the waste/recycling area. The Preliminary Site Plan demonstrates that the waste/recycling storage area is located where the collection service has convenient access and can safely turnaround so that exiting to SE Harmony Road can occur in a forward manner. The waste and recycling area is also located near a joint mailbox facility that will be shared for the entire apartment complex. The proposed waste/recycling area is located approximately 270-ft. from the primary entrance of the new apartment building, which is a comparable distance for residents in other large apartment complexes. Given the site development constraints at 6115 SE Harmony Road, and inability to develop a turnaround for waste collection vehicles on that property, the proposed shared storage facility at 5989 SE Harmony Road is the only feasible option.

Currently, residents at the Harmony Park Townhomes are provided once a week waste

and recycling service. When sharing the waste and recycling storage area at 5989 SE Harmony Road with the residents at 6115 SE Harmony Road, the applicant will be providing twice a week waste and recycling service for the entire apartment complex. As such, a larger storage area will not be required for the Harmony Park Townhomes PH II project.

Item 3a. The Interior Landscaping Standard does not Appear to be Met. It may be Necessary to Expand the Parking Lot Landscaping Variance to Include Interior Landscaping with an Exploration of Mitigation Measures.

Applicant's Response:

Based on Staff's feedback, the applicant has revised Sheet P-6 to exclude some of the area that was previously illustrated as interior landscaping. The plan now indicates that the interior landscaping area totals 324 sq. ft. when 575 sq. ft. is required to meet the standard. The applicant is therefore expanding the variance request from only parking lot perimeter landscaping to parking lot landscaping in general. The applicant's revised response to the parking lot landscaping variance under the Discretionary Relief Criteria of Section 19.911(4)(B) is provided below:

Subsection 1(a): The applicant is requesting approval of a Type III Variance for parking lot landscaping requirements associated with the proposed development. This variance includes a request reduce the parking lot perimeter landscaping requirement from 6-ft. to 3.54-ft. where a proposed retaining wall is adjacent to the west property line, reduce the perimeter landscaping requirement from 8-ft. to 1.50-ft. along the drive aisle extending from 5989 SE Harmony Road to the subject site, and to reduce the required interior landscaping requirement from 575 sq. ft. to 324 sq. ft. adjacent to the parking lot. The benefit to granting the proposed parking lot landscaping variance is that the required landscaping width can be reduced, and encroachment into the site's WQR area can be minimized. The parking lot landscaping variance also allows the installation of a retaining wall at the north end of the parking lot, thereby reducing the amount of the grading required in the WQR. Another benefit of the variance is the ability to use the existing access easement along the southern boundary of 5989 and 6115 SE Harmony Road, thereby providing shared access and not creating operational or safety issues for the adjacent arterial roadway. The impact of the proposed variance is that it reduces the width of the planting areas adjacent to the parking lot. However, if standard landscaping standards were applied to the development, the existing easement could not be used to access the site, site

grading would be more extensive, and a larger development footprint would create more impacts to the WQR area. Although landscaping on the site is constrained near the parking lot area, the Preliminary Site Plan demonstrates that this is mitigated by maintaining 72% (41,231 sq. ft.) of the site as vegetated area when only 15% (8,645 sq. ft.) is required. Therefore, when balancing relative impacts and benefits of the proposed variance versus applying typical parking lot landscaping standards, the proposal provides more benefits and fewer impacts as compared to the baseline code requirements.

Subsection 1(b)(1): The applicant's Preliminary Site Plan illustrates that the proposed parking lot landscape variance only affects properties within the Harmony Park Townhomes complex. Both 5989 and 6115 SE Harmony Road are under the same ownership and the location of the existing access easement requires a reduction in perimeter landscaping along the Harmony Road right-of-way. The plan also demonstrates that the existing sight-obscuring fence between 5989 and 6115 SE Harmony Road minimizes impacts from the proposed reduction in perimeter and interior landscaping around the parking lot.

Subsection 1(b)(2): As demonstrated by the Preliminary Grading and Erosion Control Plan, the proposed parking lot landscaping variance will reduce impacts to the WQR area on the south side of Minthorn Creek. The applicant's Water Quality Resource Site Assessment discusses ecological functions of the WQR, which as a natural resource, provides public benefits to the local watershed and larger regional environment. These functional values include protecting water features from development, providing shade and moderating microclimate, moderating streamflow and providing water storage, providing water filtration and infiltration, providing bank stabilization and sediment control, ensuring large wood recruitment, and nurturing organic material resources.

Subsection 1(b)(3): Due to site constraints which include access restrictions on SE Harmony Road, steep topography near the creek, and the desire to protect the WQR on the subject property, the parking lot must be located in the southwest corner of the site. The attached Preliminary Site Plan demonstrates that the location of existing development and access easement on the adjacent parcel creates the need to request a variance to the parking lot perimeter landscaping requirement between the parking area and front property line (see Exhibit 4). The attached Preliminary

Grading Plan illustrates that while the proposed retaining wall will limit grading impacts within the WQR, it creates the need to request a variance to interior and perimeter landscaping requirements along the north side of the parking lot. In addition, although the applicant is adding a 4th story to reduce the proposed building footprint, the narrow site does not provide adequate width to meet the parking lot perimeter and interior landscaping requirements. Instead by siting and designing the parking lot as proposed, the Arterial Street access spacing standard will be met and grading impacts within the WQR will be minimized. Therefore, the requested variance to parking lot landscaping standards responds to both the existing built and natural environment in a sensitive manner.

Subsection 1(b)(3): The Preliminary Site Plan indicates that the proposed variance to the parking lot landscaping standards will be mitigated several ways (see Exhibit 4). The plan shows that the drive aisle's encroachment into the 8-ft. landscaping area will be mitigated by separating the parking area from the public sidewalk with a 6-in. curb and a 42-in. high metal fence. In addition, the retaining wall encroachment into the 6-ft. landscaping area will be mitigated by an existing 6-ft. high chain link fence with sight-obscuring slats along the subject site's west property line. As stated above, the applicant will also be mitigating for the reduction in parking lot landscaping by maintaining 72% (41,231 sq. ft.) of the site as vegetated area when only 15% (8,645 sq. ft.) is required. With this combination of measures, impacts from the proposed parking lot landscaping variance are mitigated to the extent practicable.

Item 4a. It is Unclear Where the Structures are on the Adjacent Lot to the East. Potential Impacts to the Property Should be Discussed and Proposed Mitigation Measures Should be Identified.

Applicant's Response:

The attached WQR & Side Yard Impacts/Tree Removal Plan provides a plan view of the apartment buildings proposed encroachment into the side yard height plane. This plan has been revised to illustrate that the proposed building is located approximately 20-ft. from the existing carport located at 6125 SE Harmony Road. In addition, the plan demonstrates that the dwelling on the adjacent property is located approximately 36-ft. from the proposed apartment building, and the adjacent dwelling is buffered from the apartment building by the carport. The City's side yard height plane standards provide maximum benefits when a single-family structure and a multi-family structure are each located 5-ft. from a common property line. However in this case, the proposed distance

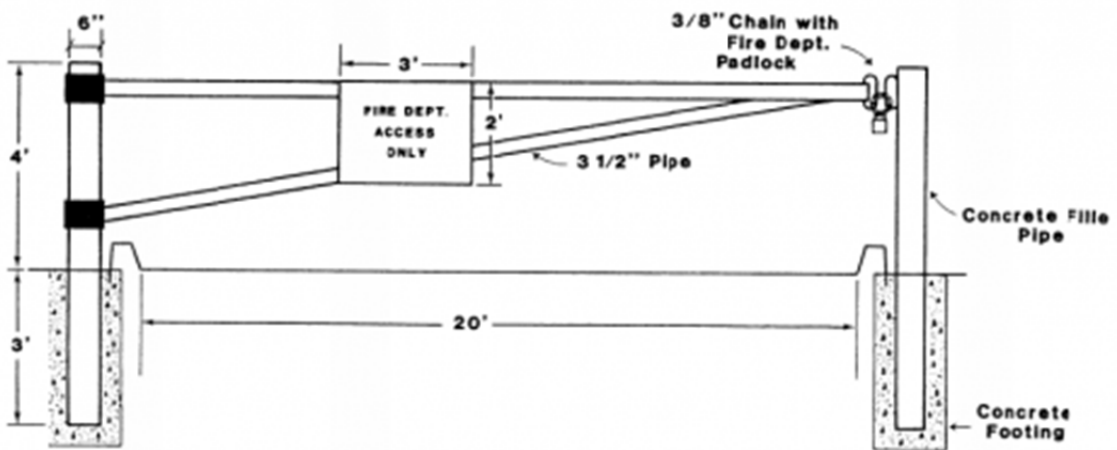
and buffering between the buildings help to mitigate impacts from the variance request. To further mitigate impacts created by the variance request, the WQR & Side Yard Impacts/Tree Removal Plan indicates that the applicant will retain an existing tree between the structures. In addition, the attached Parking/Side Yard/WQR Planting Areas Plan indicates that the applicant will be planting an evergreen hedge along a portion of the east property line.

The applicant is submitting 18 copies of this Memo, as well as 18 copies of the revised Preliminary Site Plan (Sheet P-4), WQR & Side Yard Impacts/Tree Removal Plan (Sheet P-5), Parking/Side Yard/WQR Planting Areas Plan (Sheet P-6), Preliminary Grading and Erosion Control Plan (C-3), and Building Elevations. Please feel free to contact me if you have any questions or concerns regarding these supplemental application materials.

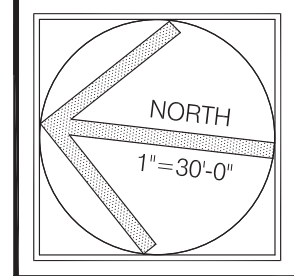
HARMONY PARK TOWNHOMES PH II



Proposed 42" High Black Metal Fence



Proposed Fire Access Gate

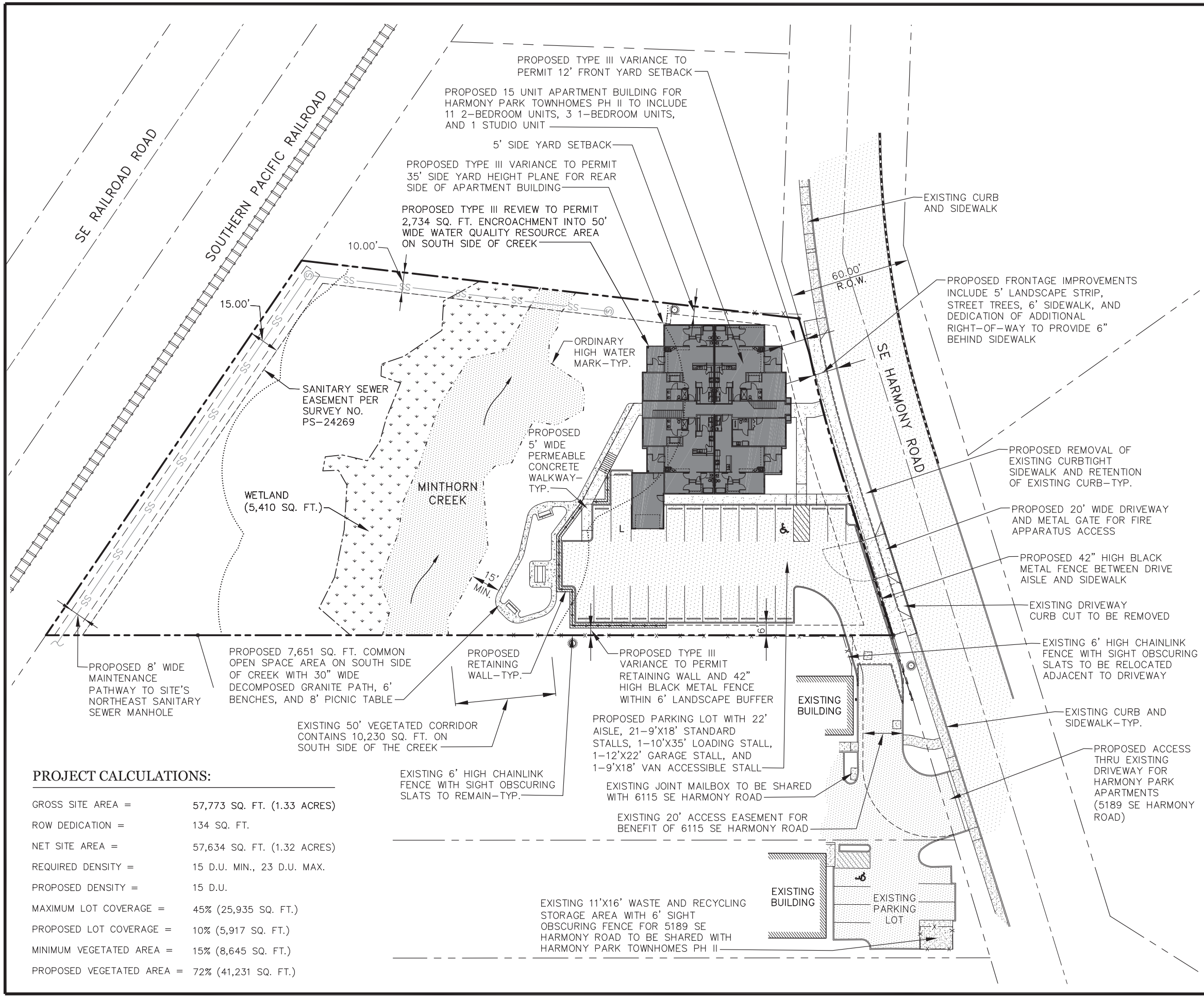


CITY OF MILWAUKIE LAND USE APPLICATION:
HARMONY PARK TOWNHOMES PH II
 T.L. 2200 / T.M. 1S2E31D
 CLACKAMAS COUNTY, OREGON
 6115 SE HARMONY ROAD
 MILWAUKIE, OR 97222

PRELIMINARY SITE PLAN
 SEPTEMBER 4, 2018

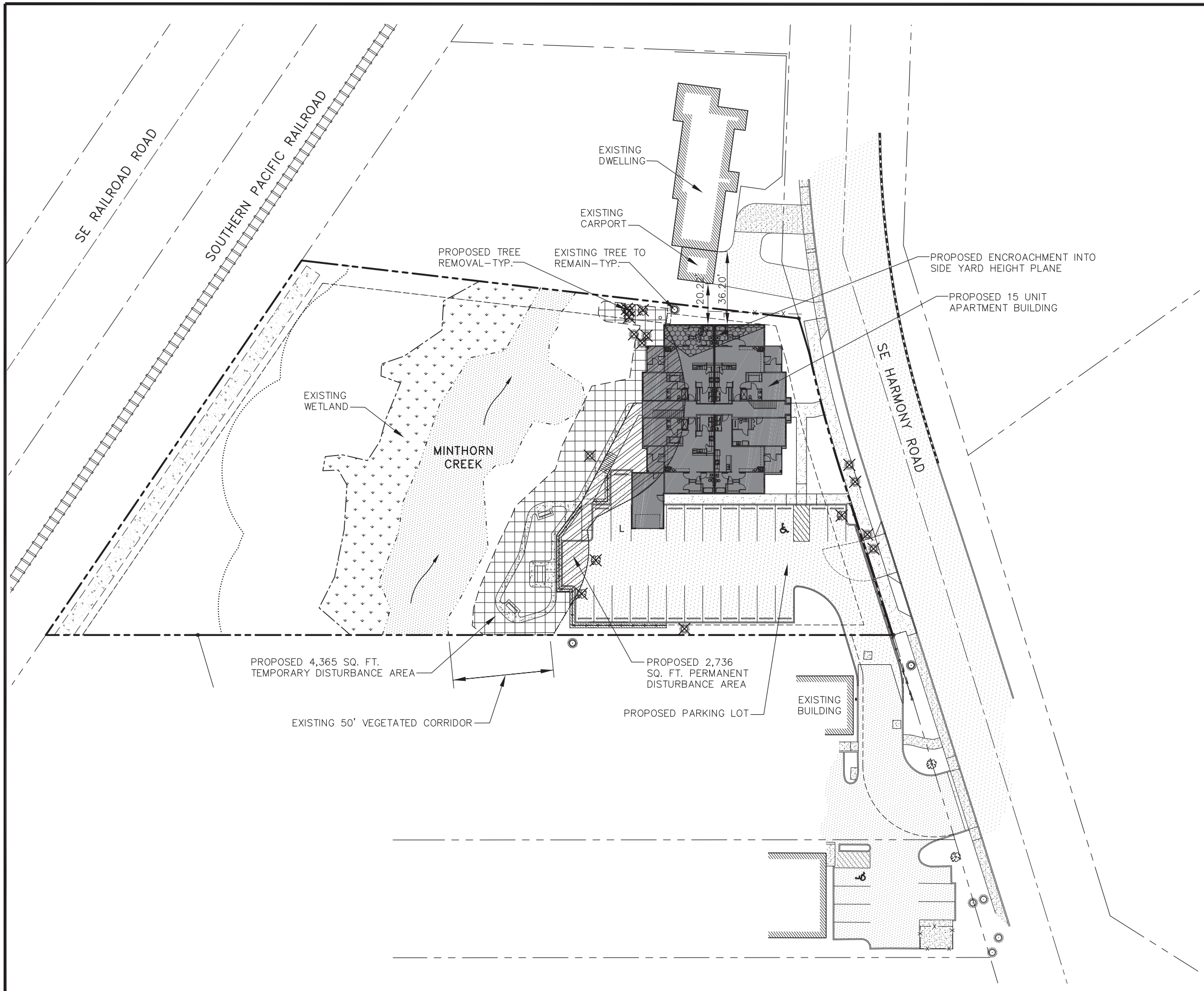
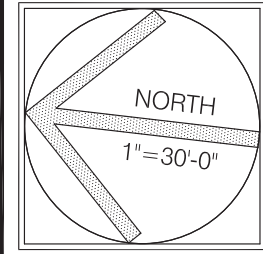
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P-4
 SHEET 4 OF 11



PROJECT CALCULATIONS:

GROSS SITE AREA =	57,773 SQ. FT. (1.33 ACRES)
ROW DEDICATION =	134 SQ. FT.
NET SITE AREA =	57,634 SQ. FT. (1.32 ACRES)
REQUIRED DENSITY =	15 D.U. MIN., 23 D.U. MAX.
PROPOSED DENSITY =	15 D.U.
MAXIMUM LOT COVERAGE =	45% (25,935 SQ. FT.)
PROPOSED LOT COVERAGE =	10% (5,917 SQ. FT.)
MINIMUM VEGETATED AREA =	15% (8,645 SQ. FT.)
PROPOSED VEGETATED AREA =	72% (41,231 SQ. FT.)



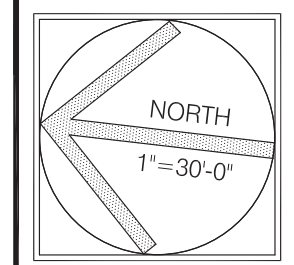
CITY OF MILWAUKIE LAND USE APPLICATION:
HARMONY PARK TOWNHOMES PH II

6115 SE HARMONY ROAD
 MILWAUKIE, OR 97222
 T.L. 2200 / T.M. 152E31D
 CLACKAMAS COUNTY, OREGON

WQR & SIDE YARD
 IMPACTS / TREE
 REMOVAL PLAN
 SEPTEMBER 4, 2018

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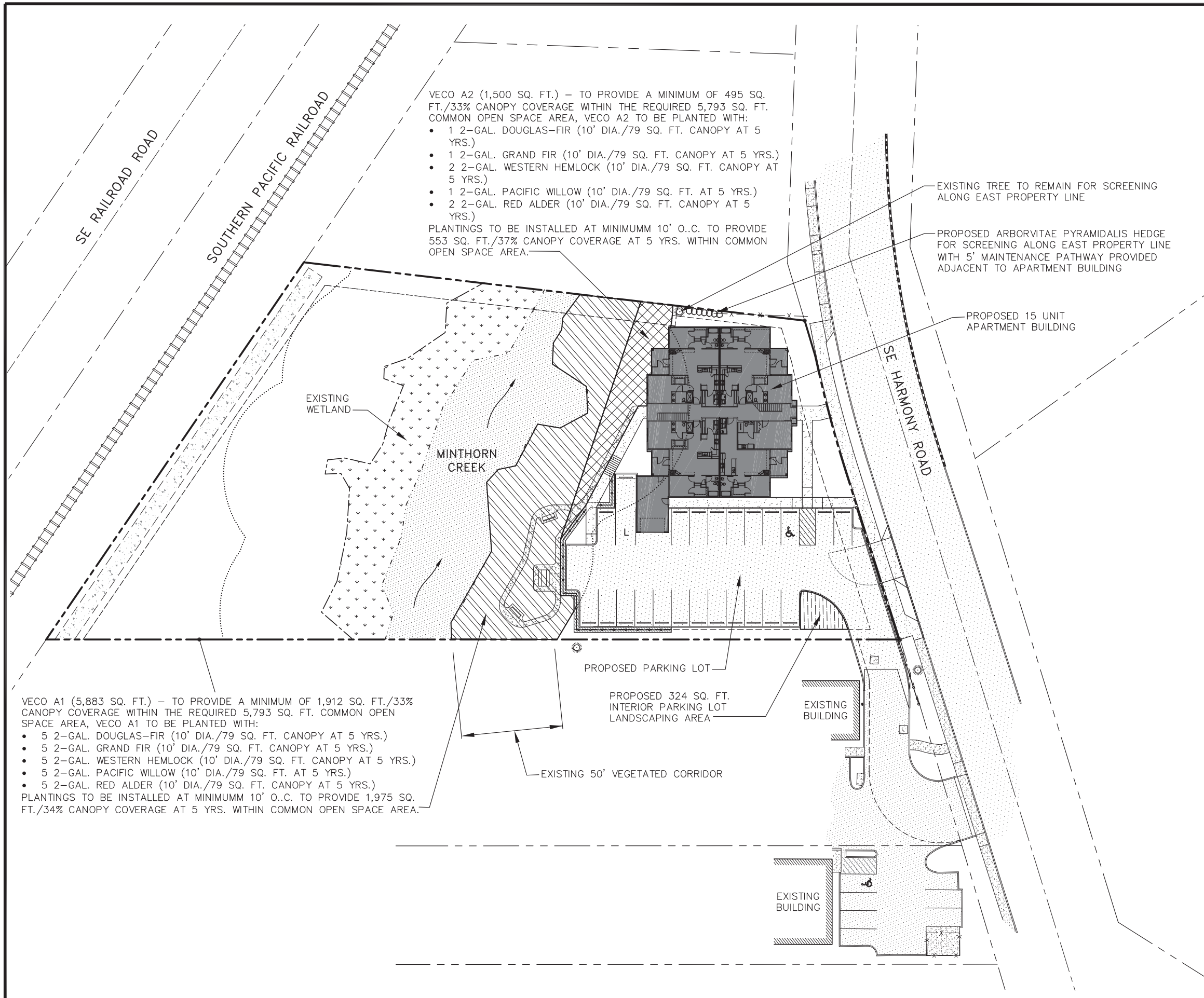
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CITY OF MILWAUKIE LAND USE APPLICATION:
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 CLACKAMAS COUNTY, OREGON
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 MILWAUKIE, OR 97222

PARKING/SIDE YARD
 /WQR PLANTING
 AREAS PLAN
 SEPTEMBER 4, 2018

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VECO A2 (1,500 SQ. FT.) – TO PROVIDE A MINIMUM OF 495 SQ. FT./33% CANOPY COVERAGE WITHIN THE REQUIRED 5,793 SQ. FT. COMMON OPEN SPACE AREA, VECO A2 TO BE PLANTED WITH:

- 1 2-GAL. DOUGLAS-FIR (10' DIA./79 SQ. FT. CANOPY AT 5 YRS.)
- 1 2-GAL. GRAND FIR (10' DIA./79 SQ. FT. CANOPY AT 5 YRS.)
- 2 2-GAL. WESTERN HEMLOCK (10' DIA./79 SQ. FT. CANOPY AT 5 YRS.)
- 1 2-GAL. PACIFIC WILLOW (10' DIA./79 SQ. FT. AT 5 YRS.)
- 2 2-GAL. RED ALDER (10' DIA./79 SQ. FT. CANOPY AT 5 YRS.)

PLANTINGS TO BE INSTALLED AT MINIMUM 10' O.C. TO PROVIDE 553 SQ. FT./37% CANOPY COVERAGE AT 5 YRS. WITHIN COMMON OPEN SPACE AREA.

VECO A1 (5,883 SQ. FT.) – TO PROVIDE A MINIMUM OF 1,912 SQ. FT./33% CANOPY COVERAGE WITHIN THE REQUIRED 5,793 SQ. FT. COMMON OPEN SPACE AREA, VECO A1 TO BE PLANTED WITH:

- 5 2-GAL. DOUGLAS-FIR (10' DIA./79 SQ. FT. CANOPY AT 5 YRS.)
- 5 2-GAL. GRAND FIR (10' DIA./79 SQ. FT. CANOPY AT 5 YRS.)
- 5 2-GAL. WESTERN HEMLOCK (10' DIA./79 SQ. FT. CANOPY AT 5 YRS.)
- 5 2-GAL. PACIFIC WILLOW (10' DIA./79 SQ. FT. AT 5 YRS.)
- 5 2-GAL. RED ALDER (10' DIA./79 SQ. FT. CANOPY AT 5 YRS.)

PLANTINGS TO BE INSTALLED AT MINIMUM 10' O.C. TO PROVIDE 1,975 SQ. FT./34% CANOPY COVERAGE AT 5 YRS. WITHIN COMMON OPEN SPACE AREA.

EXISTING TREE TO REMAIN FOR SCREENING ALONG EAST PROPERTY LINE

PROPOSED ARBORVITAE PYRAMIDALIS HEDGE FOR SCREENING ALONG EAST PROPERTY LINE WITH 5' MAINTENANCE PATHWAY PROVIDED ADJACENT TO APARTMENT BUILDING

PROPOSED 15 UNIT APARTMENT BUILDING

EXISTING WETLAND

MINTHORN CREEK

SE HARMONY ROAD

SE RAILROAD ROAD

SOUTHERN PACIFIC RAILROAD

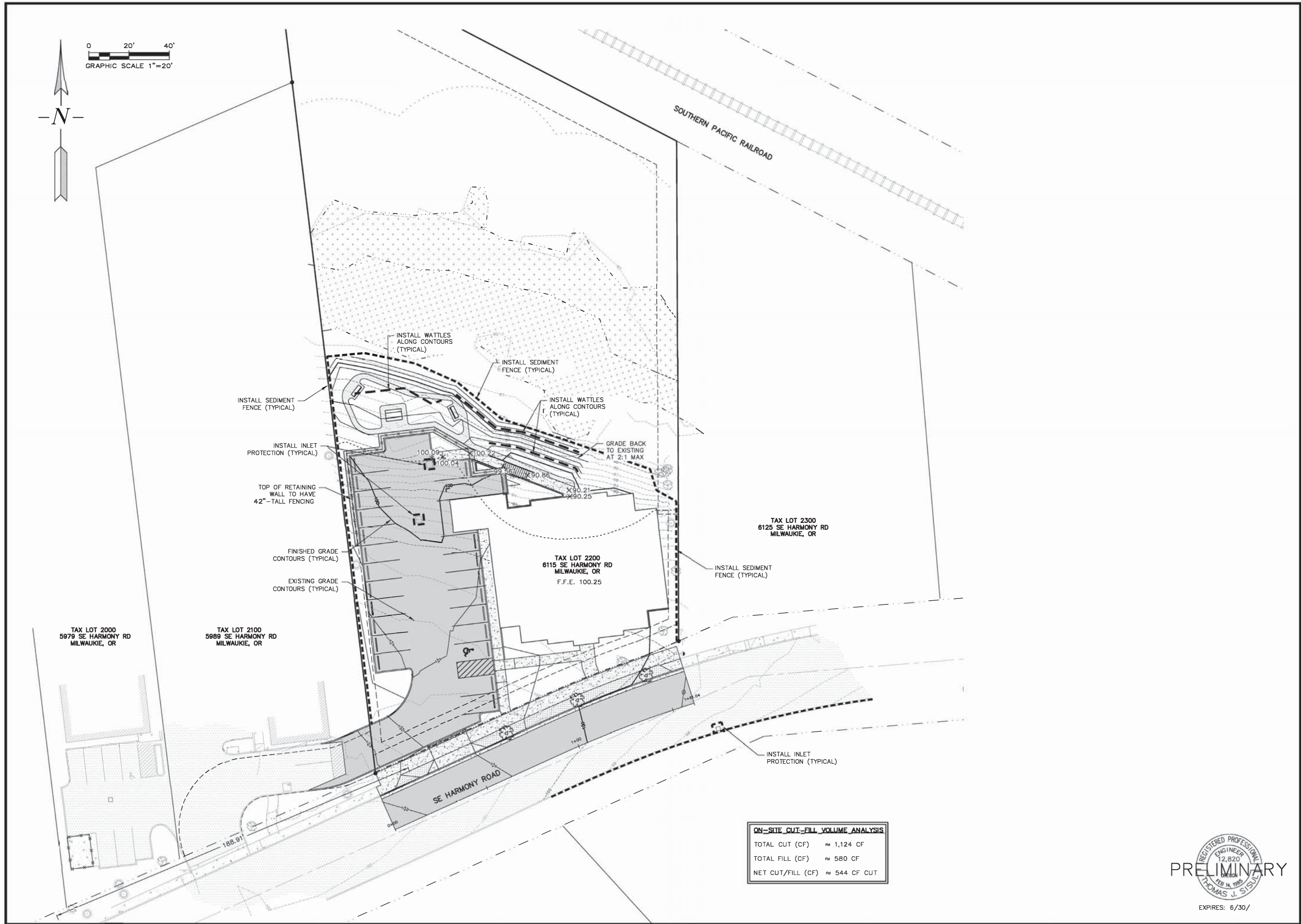
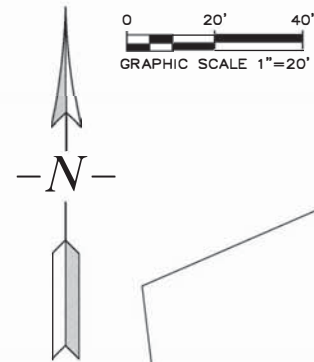
PROPOSED PARKING LOT

PROPOSED 324 SQ. FT. INTERIOR PARKING LOT LANDSCAPING AREA

EXISTING BUILDING

EXISTING 50' VEGETATED CORRIDOR

EXISTING BUILDING



ON-SITE CUT-FILL VOLUME ANALYSIS	
TOTAL CUT (CF)	≈ 1,124 CF
TOTAL FILL (CF)	≈ 580 CF
NET CUT/FILL (CF)	≈ 544 CF CUT



REVISIONS	BY

**HARMONY PARK
TOWNHOMES PH II
HARMONY PARK APARTMENTS**

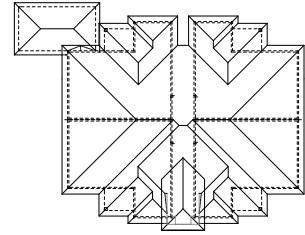
Preliminary Grading and ESC Plan

SISUL ENGINEERING
375 PORTLAND AVENUE
GLADSTONE, OREGON 97027
(503) 667-0188
WWW.SISUL.COM

DATE	MARCH 2018
SCALE	AS SHOWN
DRAWN	JDM
JOB	SGL17-072
SHEET	3
OF 3 SHEETS	

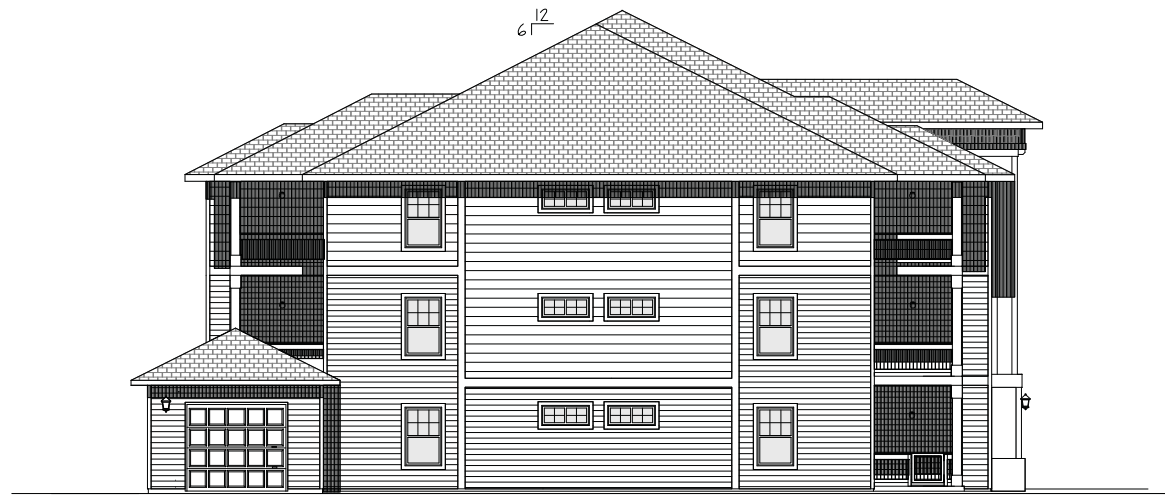
EXPIRES: 6/30/

REVISIONS	DATE
HEIGHT LIMIT ENCROACHMENT	6-5-18



FRONT ELEVATION

SCALE 1/8" = 1'-0"



LEFT ELEVATION

SCALE 1/8" = 1'-0"



RIGHT ELEVATION

SCALE 1/8" = 1'-0"



BACK ELEVATION

SCALE 1/8" = 1'-0"

Creations Northwest, LLC
 2500 Wilamette Falls Drive
 West Linn, Oregon
 Office: 503-368-0563

**Harmony Park
 Townhomes
 Phase II**
 615 SE Harmony Road
 Milwaukie, OR 97222

APARTMENT BUILDING
ELEVATIONS

CADD NAME: HA A-1r
 DATE: 10-4-17
 SCALE: AS SHOWN
 DRAWN BY: R L H
 PROJECT #:

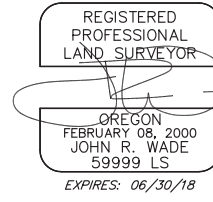
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SURVEY LEGEND - EXISTING FEATURES

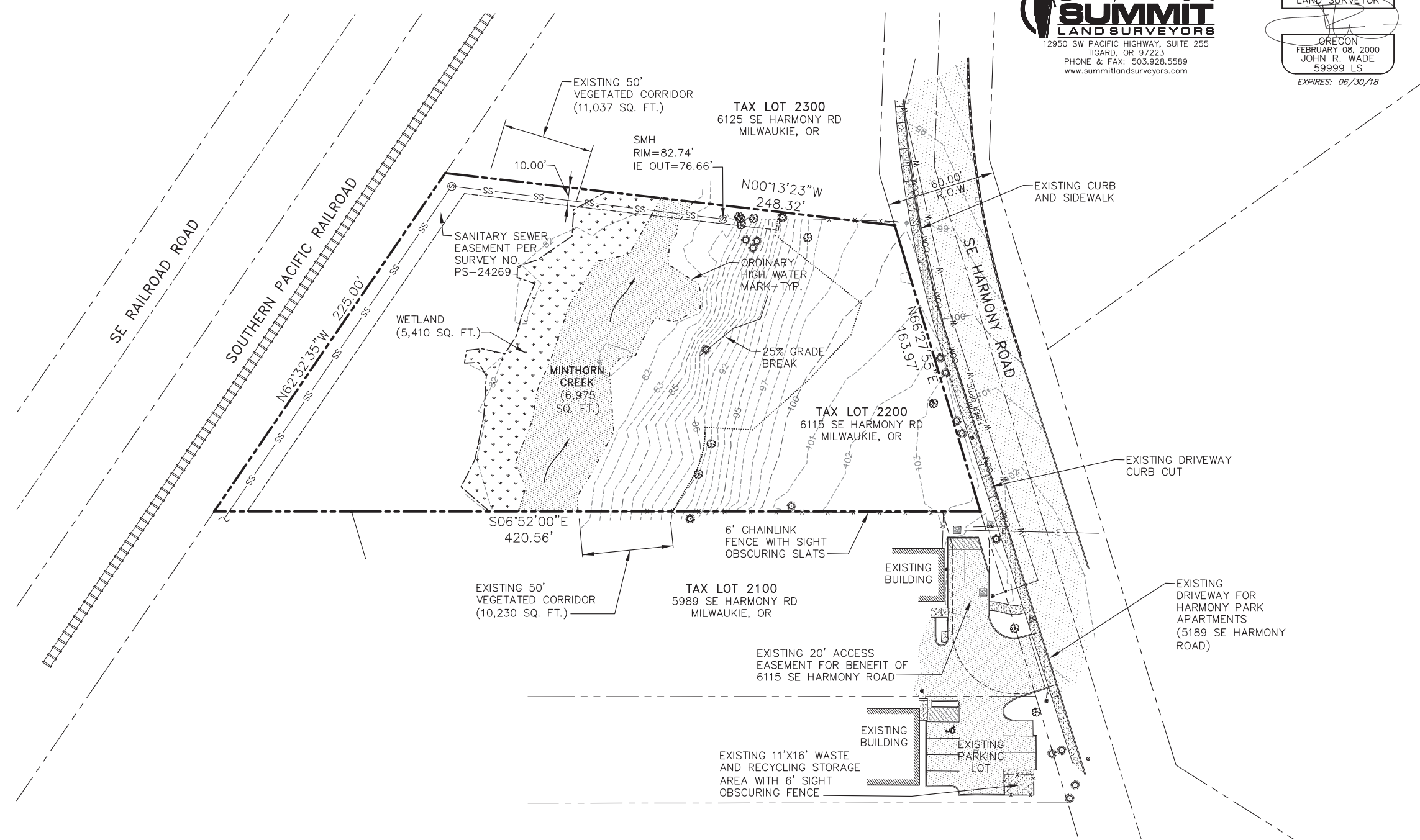
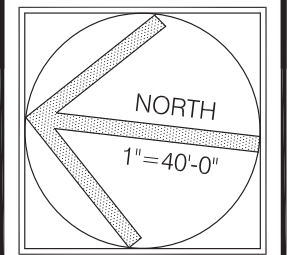
	CONCRETE WALL		CATCH BASIN / AREA DRAIN
	RAIL ROAD		SANITARY SEWER MANHOLE
	FENCE		UTILITY GUY POLE
	MINOR CONTOUR		UTILITY GUY WIRE
	MAJOR CONTOUR		ELECTRIC VAULT
	WETLAND DELINEATION		COMMUNICATIONS PEDESTAL
	SANITARY SEWER LINE		DECIDUOUS TREE
	GAS LINE		EVERGREEN TREE
	WATER LINE		SURVEY FOUND MONUMENT
	WATER METER/SERVICE		
	WATER VALVE		

GENERAL NOTES:

1. BENCHMARK INFORMATION. 3-1/2" BRONZE DISK IN SIDEWALK PER USBT 2001-040. BEING THE NORTHEAST CORNER OF JOHN GARRETT DLC NO. 61, ALSO BEING THE SOUTHEAST CORNER OF JOHN GARRETT DLC NO. 38 ON THE NORTH LINE OF SECTION 5. SEE CLACKAMAS COUNTY SN 2004-356 SHEET 4 OF 14. ELEVATION = 85.30'
2. THE BOUNDARY DEPICTED HERE ON IS PRELIMINARY AND IS SUBJECT TO CHANGE. IF ADDITIONAL MONUMENTS ARE FOUND ALONG THE NORTH LINE, THE BOUNDARY RETRACEMENT WILL BE REVISED ACCORDINGLY.
3. THE PURPOSE OF THIS SURVEY WAS TO PROVIDE A TOPOGRAPHIC BASE MAP OF TAX LOT 2200 TAX MAP 1S 2E 31D SHOWING EXISTING CONDITIONS ALONG WITH THE WETLAND DELINEATION AND MARKERS. THE AREA NORTH OF THE HEAVY VEGETATION DEMARKATION HAS NOT BEEN ACCURATELY SURVEYED, OTHER THAN THE WETLAND MARKERS DEPICTED HEREON.
4. AS OF THE DATE OF THIS MAPPING, THERE WERE NO UNDERGROUND UTILITY PAINT MARKINGS TO MAP THE SUBSURFACE UTILIZES.
5. MANHOLES SHOWN HEREON ARE TO CENTER OF MANHOLE LID, NOT CENTER OF STRUCTURE.



Cascadia
 Planning + Development Services
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 Silverton, Oregon 97381
 503-804-1089
 steve@cascadiapd.com
 www.cascadiapd.com

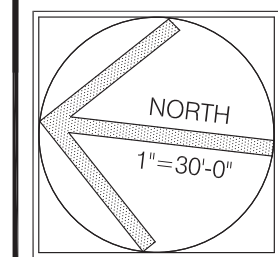


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EXISTING CONDITIONS
 SEPTEMBER 15, 2018

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P-2
 SHEET 2 OF 11

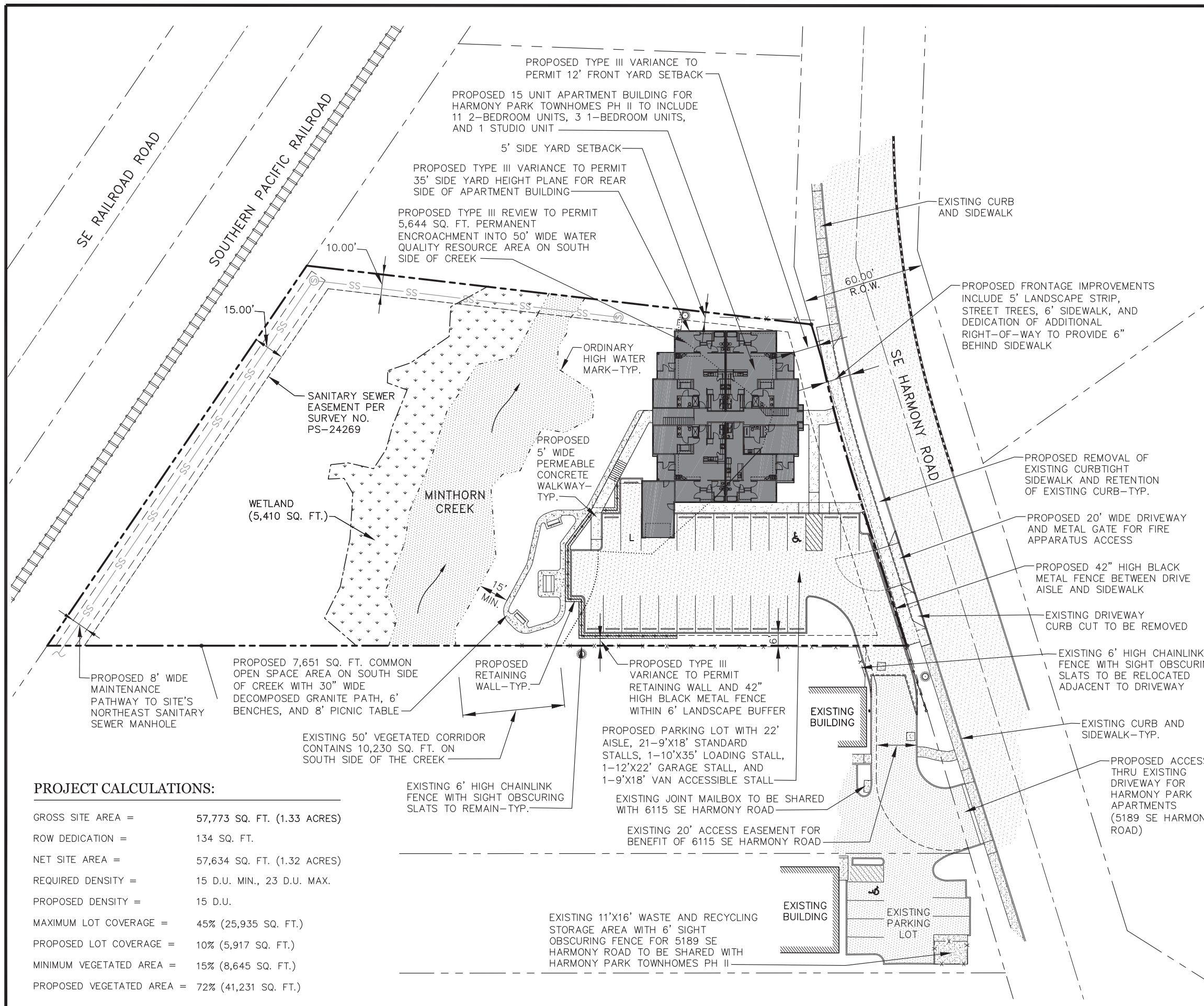


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PRELIMINARY SITE PLAN
 SEPTEMBER 15, 2018

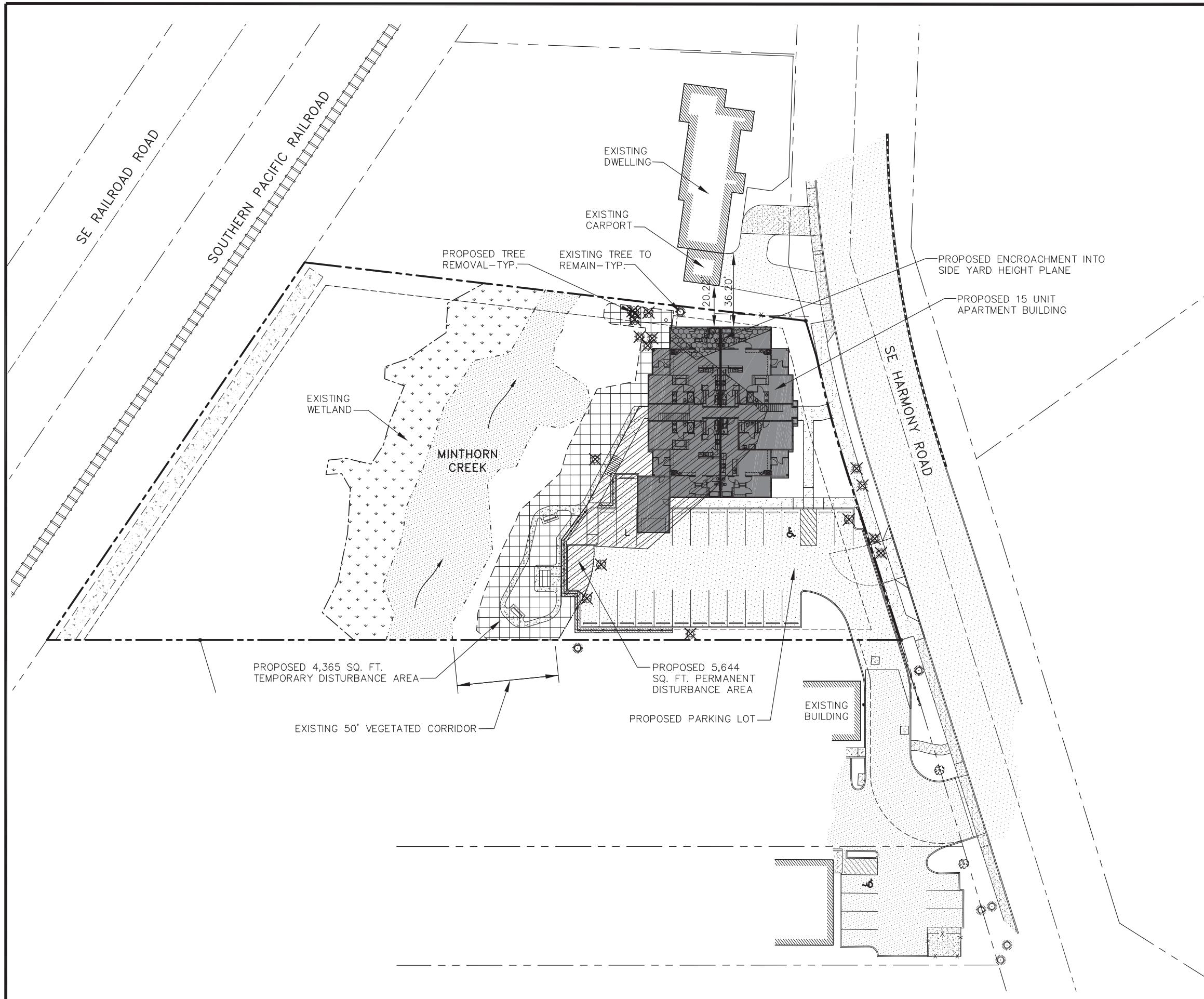
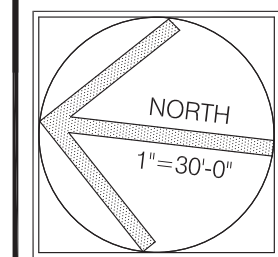
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P-4
 SHEET 4 OF 11



PROJECT CALCULATIONS:

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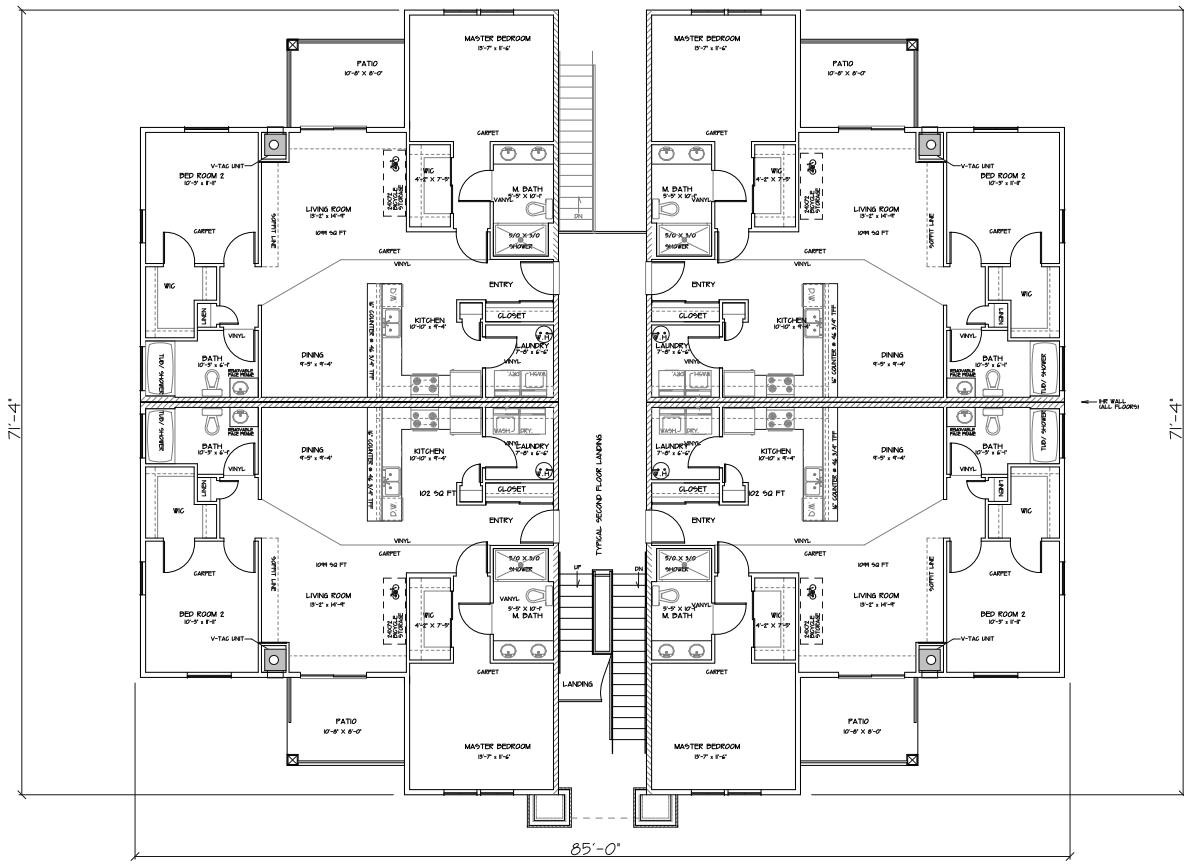
WQR & SIDE YARD
 IMPACTS / TREE
 REMOVAL PLAN
 SEPTEMBER 15, 2018

REVISIONS

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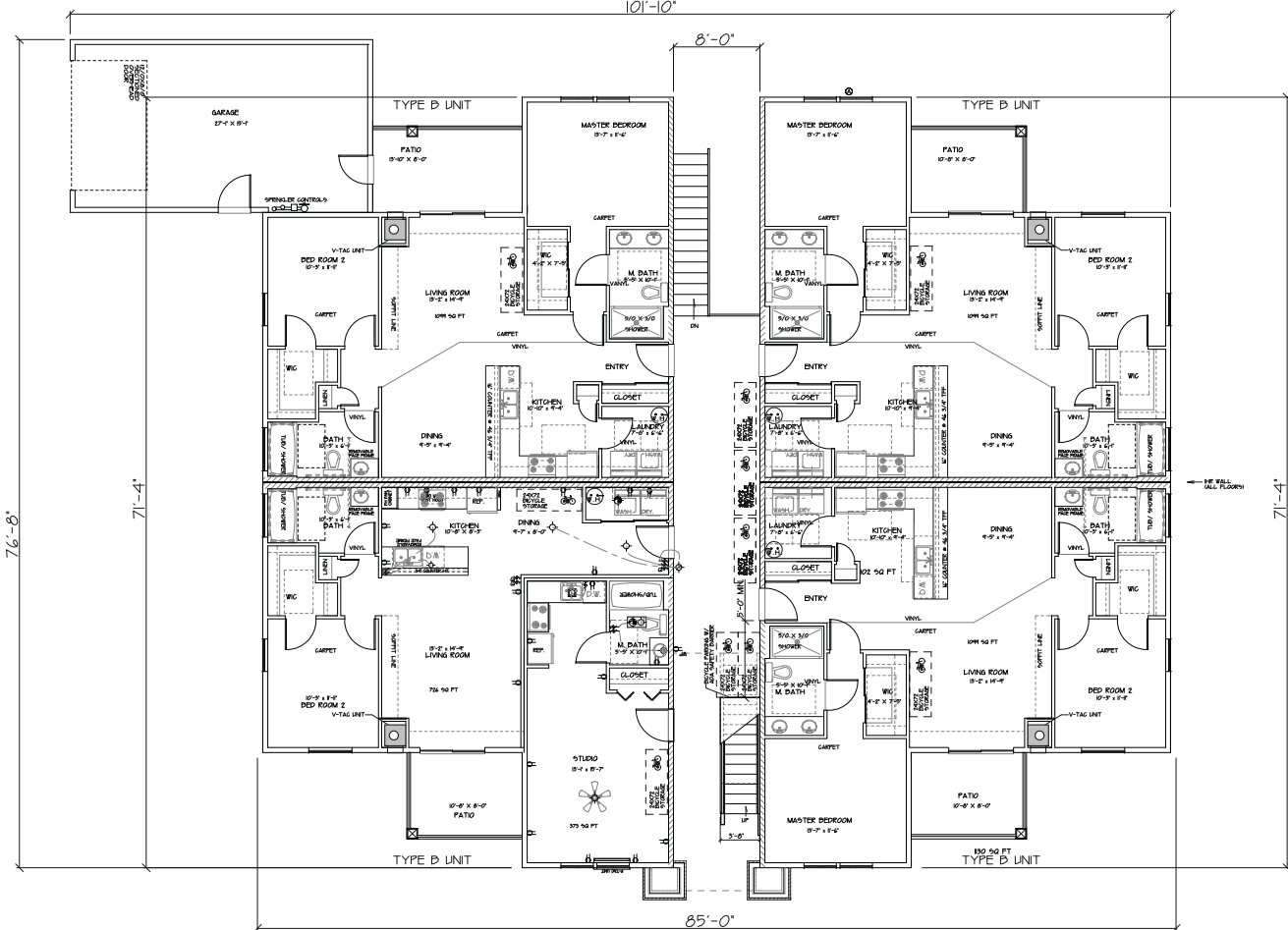


NORTH



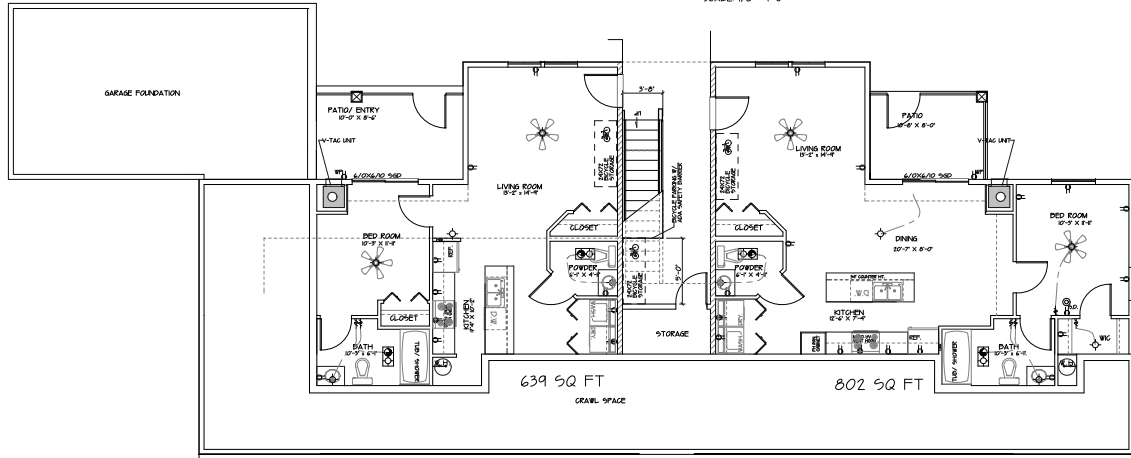
2ND & 3RD FLOOR PLAN

SCALE 1/8" = 1'-0"



1ST FLOOR PLAN

SCALE 1/8" = 1'-0"



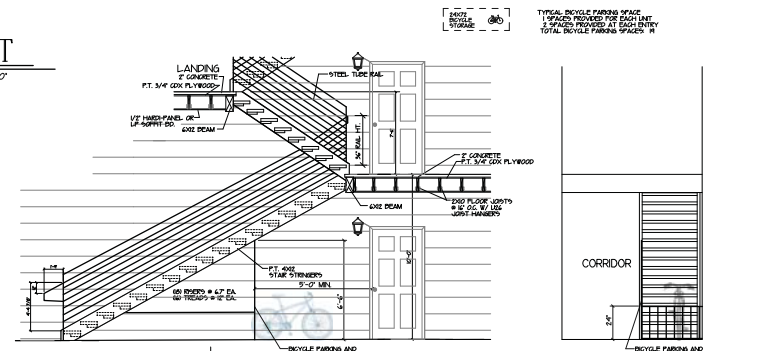
DAYLIGHT BASEMENT

SCALE 1/8" = 1'-0"

AREA PER FLOOR : 4520 SQ FT

- (1) 1099 SQ FT 2 BED ROOM UNITS
- (1) 725 SQ FT 1 BED ROOM UNIT (MAIN FLOOR)
- (1) 375 SQ FT STUDIO APARTMENT (MAIN FLOOR)
- (1) 639 SQ FT 1 BED ROOM UNIT (BASEMENT)
- (1) 802 SQ FT 1 BEDROOM UNIT (BASEMENT)

15 UNITS



SHORT TERM BICYCLE PARKING

SCALE 3/16" = 1'-0"

SHEET NO. A-2

CADD NAME: HA-A-2
DATE: 4-17-18
SCALE: AS SHOWN
DRAWN BY: R L H
PROJECT #:

APARTMENT BUILDING
FLOOR PLANS

Harmony Park
Townhomes
Phase II
6115 SE harmony Road
Milwaukie, OR 97222

Creations Northwest, LLC
CCB#181881
2500 Wilamette Falls Drive
West Linn, Oregon Office: 503-908-0563

REVISIONS	DATE

Brett Kolver

From: Amos, Matt [mailto:Matt.Amos@clackamasfire.com]
Sent: Wednesday, August 22, 2018 3:59 PM
To: Dennis Egner <EgnerD@milwaukieoregon.gov>
Subject: 6115 SE Harmony Rd. VR-2018-005, NR-2018-005, DEV-2018-006

Good afternoon Denny,

Clackamas Fire District #1 has no comments for this variance request.

Thank you,

Matt Amos

Fire Inspector | Fire Prevention
direct: 503.742.2661
main: 503.742.2600



CLACKAMAS FIRE DISTRICT #1
www.clackamasfire.com

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Brett Kelter

From: Wyffels, Michelle <WyffelsM@trimet.org>
Sent: Friday, September 07, 2018 1:43 PM
To: Brett Kelter
Subject: RE: call for comments on VR-2018-005

Brett-

Thank you for following up. Yes, some things do slip through the cracks.

I do not have any comments related to this development.

Michelle

From: Brett Kelter <KelterB@milwaukieoregon.gov>
Sent: Friday, September 07, 2018 11:13 AM
To: Kent, Ken <KenKen@co.clackamas.or.us>; BROOKING Joshua C <Joshua.C.BROOKING@odot.state.or.us>; Rebecca Hamilton <Rebecca.Hamilton@oregonmetro.gov>; Wyffels, Michelle <WyffelsM@trimet.org>; LinwoodZP@gmail.com; jtrem56@gmail.com
Cc: Alex Roller <RollerA@milwaukieoregon.gov>; Peter Passarelli <PassarelliP@milwaukieoregon.gov>
Subject: call for comments on VR-2018-005

Hello,

A quick note to check in and see if any of you will have any comments to send for the proposed 15-unit apartment building at 6115 SE Harmony Rd. The original referral form is attached, with a list of applicable code sections and the project webpage.

The applicant provided some supplemental materials on Wednesday of this week, in response to items listed in the letter deeming the application complete. A PDF of these materials is attached for your reference.

If you could send me any comments on the proposal by early next week (Sept 10 or 11), that would be ideal.

Thank you!

BRETT KELVER

Associate Planner
City of Milwaukie
o: 503.786.7657 f: 503.774.8236
6101 SE Johnson Creek Blvd • Milwaukie, OR 97206

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memorandum

date September 11, 2018
to Brett Kolver, AICP (City of Milwaukie)
from Sarah Hartung
subject Natural Resource Review for Harmony Park Townhomes Phase II

Thank you for asking Environmental Science Associates (ESA) to assist the City of Milwaukie with natural resource evaluation services for the Harmony Park Townhomes Phase II project. This memorandum summarizes our technical review of land use application materials related to site natural resources regulated by Milwaukie Municipal Code (MMC), including Water Quality Resource (WQR) areas. The materials we reviewed included a Water Quality Resource Site Assessment report prepared by SWCA, which addresses requirements of MMC Section 19.402 (Natural Resources) and site plans prepared by Cascadia Planning and Development Services.

This memorandum is formatted to address specific technical review tasks identified by the City in your request for ESA services. The City-requested tasks are identified in **bold**, followed by our responses.

1. Site Visit: assess the existing conditions and verify that the applicant's presentation of existing conditions in the WQR Site Assessment is accurate and thorough.

Response: ESA staff (Sarah Hartung) visited the Harmony Park site on August 27, 2018. The site visit involved walking the property to assess existing conditions with relevant maps and photos from the water quality report in hand. In general, ESA observed site conditions to be consistent with those illustrated on the report figures and described in the narrative, although a few discrepancies were noted for the vegetated corridor sample plots. Based on the site visit, vegetation shown in Photo 6 of the application, and the general location of the sample plot, it appears that VECO A2 should have some woody cover instead of zero per Table 1 below, although it's not certain this would change the rating of the vegetated corridor. In the future, it would be beneficial for the applicant to identify the size of the sample plot which can have an effect on total cover. Additionally, it's unclear how the applicant came up with a total canopy cover of 80% for both VECO A1 and VECO B. It appears that the canopy cover should be 50% and 100% respectively. See the markups in Table 1 below.

Table 1. Vegetated Corridor Assessment Summary

Species Name	Common Name	Native Status	VECO A1 Cover	VECO A2 Cover	VECO B Cover
Trees					
<i>Acer macrophyllum</i>	big-leaf maple	Native	30	-	-
<i>Aesculus hippocastanum</i>	horse chestnut	Invasive, Nuisance*	-	-	60
<i>Fraxinus latifolia</i>	Oregon ash	Native	-	-	20
<i>Prunus laurocerasus</i>	English laurel	Invasive, Nuisance*	20	-	20
Shrubs					
<i>Crataegus monogyna</i>	English hawthorn	Invasive	20	-	-
<i>Corylus comula</i>	Beaked hazelnut	Native	10	-	-
<i>Ilex aquifolium</i>	English holly	Invasive	10	-	-
<i>Rosa pisocarpa</i>	Clustered rose	Native	-	-	20
<i>Rubus armeniacus</i>	Himalayan blackberry	Invasive, Noxious	10	-	-
Herbs					
<i>Hedera helix</i>	English ivy	Invasive	90	-	-
<i>Lolium perenne</i>	Perennial ryegrass	Non-native	-	100	-
<i>Rubus leucodermis</i>	Black-cap raspberry	Native	-	-	10
Total Aerial Cover			100	100	100
Total Canopy Cover			80 ?	0	80 ?
Corridor Condition			Marginal	Poor	Good

*Nuisance plant according to the Portland Plant List

2a. WQR Boundaries: Does the demarcation of WQR boundaries, including vegetated corridors and the delineated wetland, appear to be accurate and in conformance with the standards described in MMC Section 19.402?

Response: The demarcation of the WQR boundary does not appear to be drawn correctly adjacent to the widest section of Minthorn Creek according to Table 19.402.15. For primary protected water features with slopes $\geq 25\%$ for less than 150 feet, the width of the vegetated corridor is the distance from the starting point of the measurement (i.e. OHW) to the top of ravine, or the break in $\geq 25\%$ slope plus 50 feet. Slopes immediately adjacent to Minthorn Creek on the south side are greater than 25%, and the break in slope is shown with red dots in Figure 1 below. From the break in slope, another 50 feet of horizontal distance should be added to expand the width of the vegetated corridor as approximated in red in Figure 1.

The delineated wetland and Minthorn Creek appear to be accurately mapped. No wetlands were observed on the south side of the stream during ESA’s August 27, 2018 site visit.

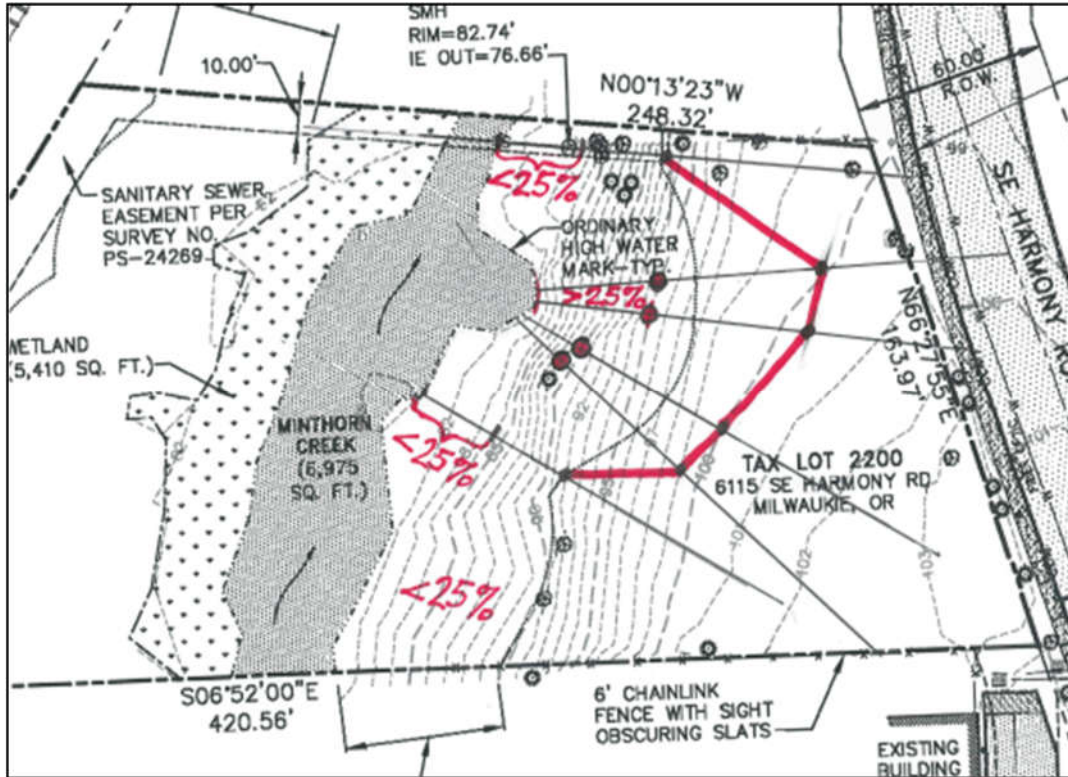


Figure 1: The corrected WQR approximated in red based on steep slopes adjacent to Minthorn Creek

2b. Alternatives Analysis

- Are the applicant’s estimates of the various alternatives’ impacts to the WQR reasonable and accurate?

Response:

Alternatives A, B and C do not provide estimates of potential impacts to the WQR in terms of square footage and therefore it is difficult to compare area impacts to the preferred alternative (Alternative D). Alternatives A and B describe configurations that do not meet other code standards and therefore are discounted, although it would be interesting to know if a variance to the front yard setback could be given to allow the development of Alternative B.

Alternative C presents a fatal flaw with the expected inability to receive a railroad crossing permit. Alternative C could be discussed initially as a constraint of the site, instead of a viable development option.

- Are there additional obvious alternatives that should be considered?

Response:

An apparent missing alternative is the discussion of providing parking underneath the proposed apartment building to reduce the development footprint within the WQR. It’s not clear if this idea is feasible, but it seems as though it could be addressed in some fashion. Will bike racks be provided or alternative transportation modes be incentivized for residents in order to reduce parking requirements?

Providing public access to the WQR seems beneficial for future residents, but a discussion of at least one other configuration for public access in addition to the small pathway would be useful – such as an additional overlook at the top of the WQR instead of a pathway to reduce intrusion into the WQR.

2c. Impacts

• Is the assessment of water quality impacts related to the proposed development an accurate and complete one?

Response: The discussion of water quality impacts on page 6 of the water quality assessment report is short and does not address stormwater runoff impacts to Minthorn Creek.

Different temporary and permanent impact numbers are provided in the Land Use Review dated May 29, 2018 compared with P-5, Sheet 5 of 11 of the Application Form packet.

The impact discussion in the Water Quality Resource Site Assessment on page 6 states that, “No wetlands, stream, or VECO B impacts are proposed,” but the grading plan on Sheet C-2 shows earthwork extending down the slope into Minthorn Creek. This extensive grading could be an artifact of the AutoCad program used to generate the proposed contours. It seems feasible to tighten up the proposed contours to avoid filling in the stream. Stream fill would require coordination and/or permitting with the Department of State Lands and the US Army Corps of Engineers.

Thirty-inch pervious trails are exempt from WQR review; however, ESA recommends considering the picnic areas as a permanent impact because these areas will be permanently converted to non-vegetated surfaces.

• Is the proposed removal of existing trees within the WQR warranted, given the location of the proposed site work and improvements?

Response: It’s not clear why the three trees circled in yellow in Figure 2 below require removal (too close to the proposed building?). No grading is proposed in that area according to Sheet C – 2. Otherwise the tree removal plan on Sheet 5 of 11 looks reasonable.

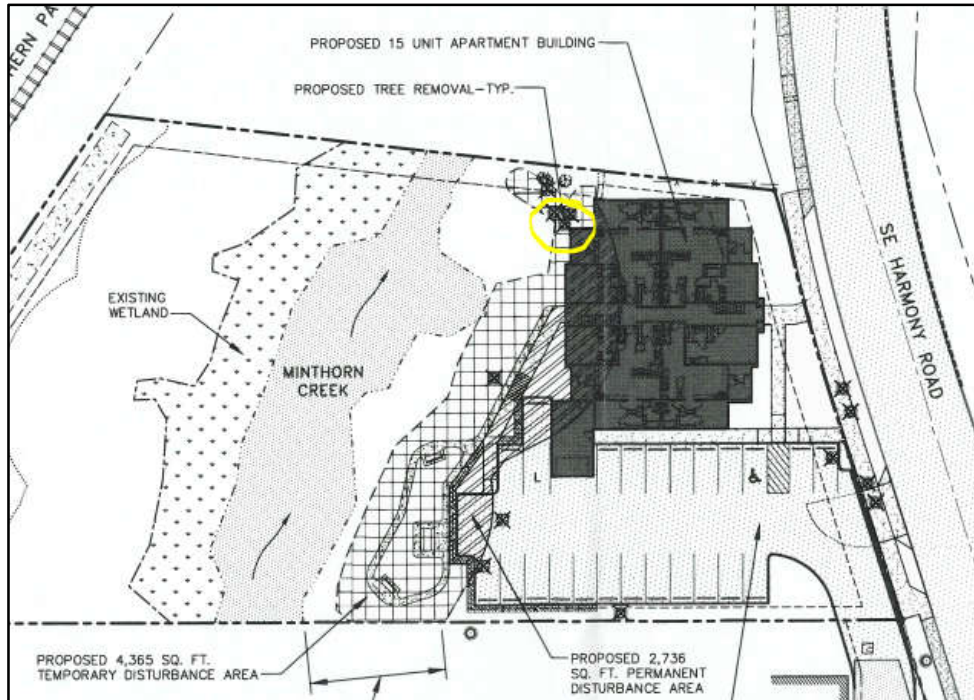


Figure 2: Purpose of proposed tree removal highlighted in yellow is unclear.

2d. Mitigation

• Are the numbers and species of proposed mitigation plantings sufficient and appropriate for the proposed impacts to the WQR, including any distinctions between VECO A1 and VECO A2?

Response: The mitigation proposes to plant 25 trees in 1,912 ft.² in VECO A1 and a mixture of trees, shrubs and groundcover in 1,500 ft.² in VECO A2. The total proposed mitigation area is 3,412 ft.² to compensate for 2,736 ft.² of permanent disturbance at an approximate 1.25 to 1 replacement ratio. Mitigation ratios are typically 1.5 to 1 or 2 to 1 to account for temporal loss of water quality resource functions. Additionally, our interpretation of the regulated vegetated corridor would result in increased permanent disturbance area (see Item 2a of this memo). We suggest:

- Recalculate permanent impacts;
- Recalculate the mitigation areas (i.e. available planting space) to exclude the gravel paths and picnic tables;
- Consider a different planting scheme, such as native forbs and grasses within the looped path and dense, native, low-growing shrubs adjacent to the pathway to increase buffering between the public use area and the WQR downslope; and
- Develop a mitigation plan that achieves, at least, 1.5 to 1 replacement ratio.

- **Confirm the projected estimate of canopy coverage percentage within the common open space area, as shown on Sheet P-6. [Staff notes a discrepancy between Sheet P-6 and the planting list provided for VECO A1 on page 8 in the WQR Site Assessment—use Sheet P-6 as the latest proposal for planting in VECO A1.]**

Response: The method of projecting estimated canopy cover is not standard. Instead, propose a mitigation area and density of mitigation plants for more objective tracking and monitoring. If 25 trees are proposed at 10 feet on-center, the planting area should be 2,500 ft.², not 1,912 ft.²

- **To ensure the success of the mitigation plantings in VECO A, and to adequately mitigate the proposed WQR disturbance in general, should invasive plants be removed from all or some portion of VECO B?**

Response: While removing invasive plants from VECO B on the north side of the stream would be beneficial, we recommend removing weeds from a minimum 10-foot buffer adjacent to the proposed mitigation area to promote mitigation success. This 10-foot buffer is a standard width used in other local jurisdictions. Additional maintenance and weeding may be required depending on the results of the monitoring report from the 2nd growing season. Weed cover in excess of 20 percent aerial cover can threaten the success of mitigation plantings and would indicate the need for additional maintenance and monitoring. Removing invasive plants from VECO B may be needed as potential mitigation if additional permanent impacts were proposed – see Item 2a.

- **Overall, is the proposed mitigation sufficient to restore the disturbed WQR to an equal or better condition?**

Response: It is our conclusion that the proposed mitigation is not sufficient. Items to improve include:

- Groundcover and shrubs appear to be lacking from the proposed planting in VECO A1 per P-6, Sheet 6 of 11.
- It's unclear how many trees would be planted within the looped pathway; elaborate on the mitigation planting strategy with respect to the public access areas.
- The planting plan does not address how temporary grading impacts will be restored.
- The existing mitigation ratio is 1.25 to 1.

2e. Overall, how will the ecological function and value of the WQR in its current state be affected by the proposed disturbance and subsequent mitigation? Choose one of the three following responses:

- **Improved**
- **Unchanged**
- **Degraded**

Response: The vegetated corridor would be somewhat improved with the mitigation plan. Considerations for strengthening the plan for it to be judged “Improved” include:

- Require dense native shrubs to be planted around the gravel pathway on the downslope side to prevent off-trail use and potential damage to the WQR slope.

- Add shrubs, grasses and forbs throughout VECO A1 to intercept runoff and enhance the vegetated corridor.
- Require a split-rail fence to demarcate the development from the remaining protected WQR.

3. Written Report: if any deficiencies in the application are noted, please indicate whether the issue (1) needs to be resolved with revised application materials prior to issuance of a decision, (2) can be resolved through adding a condition of approval, or (3) does not impact the overall review of the proposal.

Response: The following deficiencies are noted and would be best resolved prior to issuance of a decision:

- The alternatives analysis should include estimates of area impacts to the WQR from different viable options and include an alternative that discusses parking underneath the townhouse complex or parking alternatives that minimize intrusion into the WQR.
- Recalculate the impact area.
- Strengthen the discussion of stormwater impacts to Minthorn Creek.
- Improve the mitigation plan by: 1) including groundcover and shrubs in VECO A1, 2) considering a different planting scheme within the looped pathway, 3) increasing the replacement ratio to 1.5 to 1 or 2 to 1, instead of 1.25 to 1 to achieve “Improved” conditions in the vegetated corridor, and 4) identifying a planting mix on P-6 to restore temporary disturbances to the WQR.
- Correct the grading on the slope down to Minthorn Creek and avoid fill below OHWL.

Thank you for asking ESA to provide natural resources review assistance for the Harmony Park Townhomes Phase II project. Please let me know if you have any questions or would like to discuss any of the information presented in this memorandum.

Brett Kelter

From: Sarah Hartung <SHartung@esassoc.com>
Sent: Friday, September 14, 2018 2:28 PM
To: Brett Kelter
Subject: RE: revised materials

Hi Brett: The planting plan presented on P-6 dated September 4, 2018 does not change our recommendations which were based on the June 14, 2018 version of P-6. The most recent version of P-6 has the same information on VECO A1 as the June 14 version that could benefit from clarification. The issue to clarify has to do with the fact that P-6 calls out a planting area of 5883 ft.² for A1, but then states that 25 trees will be planted in 1912 ft.² within the 5,883 square foot area.

It's misleading to present VECO A1 as 5,883 ft.² but only plant a portion of it (i.e. 1,912 ft.²). Regardless of the size of A1, it would be good to see specifications for groundcover and shrub species, density, and size on P-6 in addition to the tree planting schedule. Additionally, if 25 trees are proposed for planting at 10 feet on-center, then the mitigation area needed would be 2,500 ft.² which should be specifically shown on P-6.

Let me know if you have any questions and have a great afternoon.
Regards,
Sarah

From: Brett Kelter <KelterB@milwaukieoregon.gov>
Sent: Friday, September 14, 2018 11:13 AM
To: Sarah Hartung <SHartung@esassoc.com>
Subject: revised materials

BRETT KELVER

Associate Planner
City of Milwaukie
o: 503.786.7657 f: 503.774.8236
6101 SE Johnson Creek Blvd • Milwaukie, OR 97206

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Brett Kelter

From: Sakuma, Hideo <hsakuma@wm.com>
Sent: Tuesday, September 11, 2018 2:40 PM
To: Brett Kelter
Subject: RE: Waste Management comment on proposed collection area?
Attachments: truck clearance.pdf

Hello Brett,

Good to hear from you.

The trucks can do 3 point turns if need be to service a container. However that being said, if the dumpster were on wheels, the driver could roll them out and service them if the ground is flat and not on a hill. Then put them back into the corral area.

I have included a truck PDF that shows length and all the information you should need.

The preferable enclosure would be where the driver could drive right up to it and service the container and be on his/her way.

The largest container that can have wheels is a 3 yard, in some rare cases a 4 yard can, but not very often.

I hope I answered your questions and also that the PDF helps shed some light on the enclosure area.

If not please let me know and I will try again.

Regards,
Adam

Hideo Adam Sakuma
Inside Sales Representative
480 383 5610 Direct
866 835 6061 Fax

Waste Management
2550 W Union Hills Dr
Phoenix, AZ 85027

hsakuma@wm.com
www.wm.com

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From: Brett Kelter [mailto:KelterB@milwaukieoregon.gov]
Sent: Tuesday, September 11, 2018 2:30 PM

To: Sakuma, Hideo <hsakuma@wm.com>

Subject: [EXTERNAL] Waste Management comment on proposed collection area?

Adam,

I got your name from correspondence from an earlier land use application (Northwest Housing Alternatives project at 2316 SE Willard St). I'm not sure if you're the right person to ask when we have questions about garbage/recycling collection facilities in general, but if not maybe you can point me to someone else in the Waste Management system.

We are reviewing a proposed 15-unit apartment building at 6115 SE Harmony Rd, which is adjacent to an existing apartment complex at 5989 SE Harmony Rd. The new building would share the existing garbage/recycling area, due to the suggestion that the site configuration does not allow much room for a collection truck to maneuver if a separate collection area was established elsewhere on the site.

I am attaching a PDF mark-up that shows the existing collection area. My simple questions to you are (1) how does a truck maneuver now to collect materials, and (2) with the shared access for the new building to the east, is there a place where a second collection area could be established that would allow a truck to get in and out of that part of the site?

Below is a screen shot of the Google street view of the existing collection area. If you could give me some feedback on this in the next day or two, it would be a big help.

Thank you!

BRETT KELVER

Associate Planner

City of Milwaukie

o: 503.786.7657 f: 503.774.8236

6101 SE Johnson Creek Blvd • Milwaukie, OR 97206

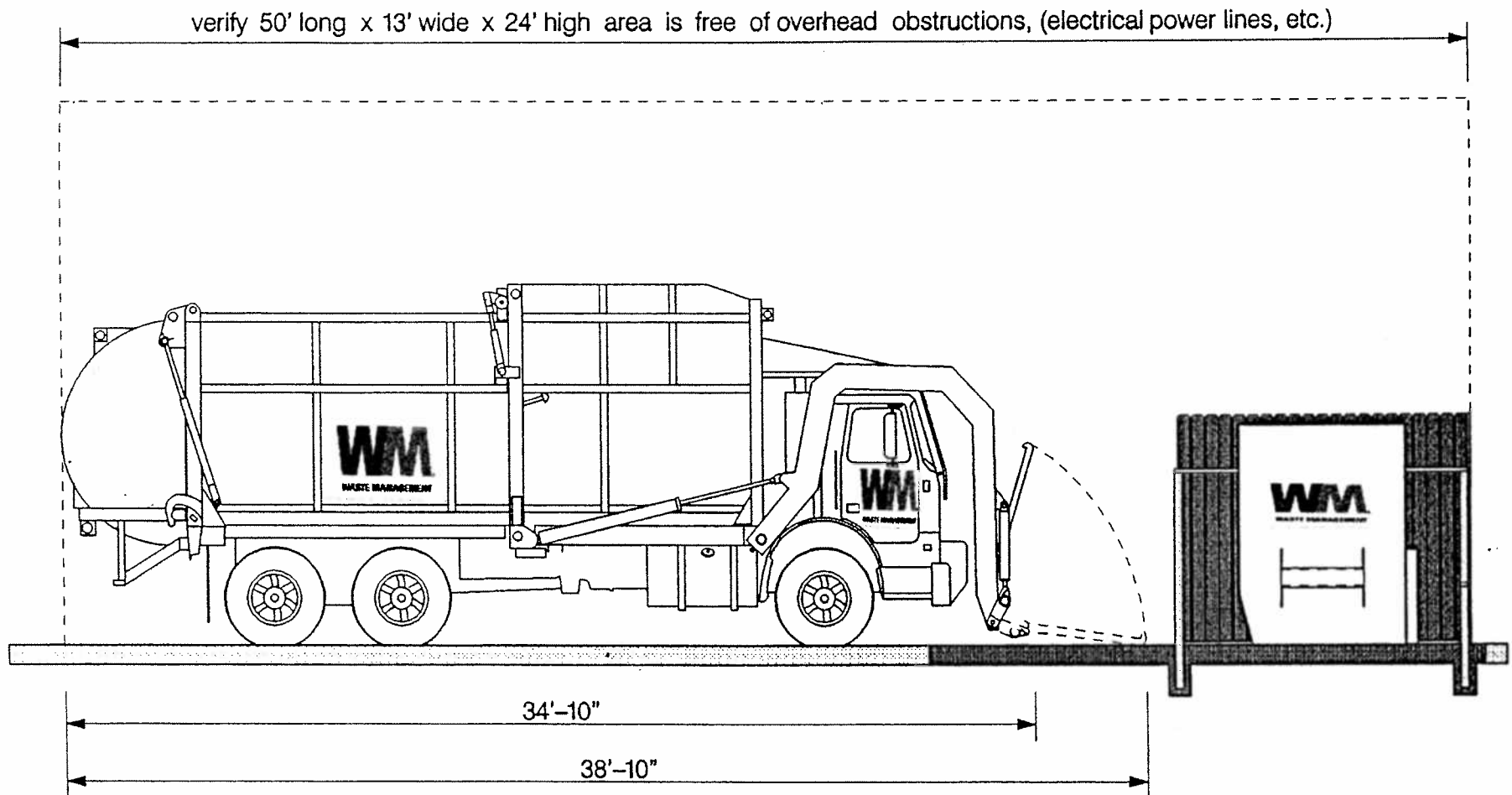


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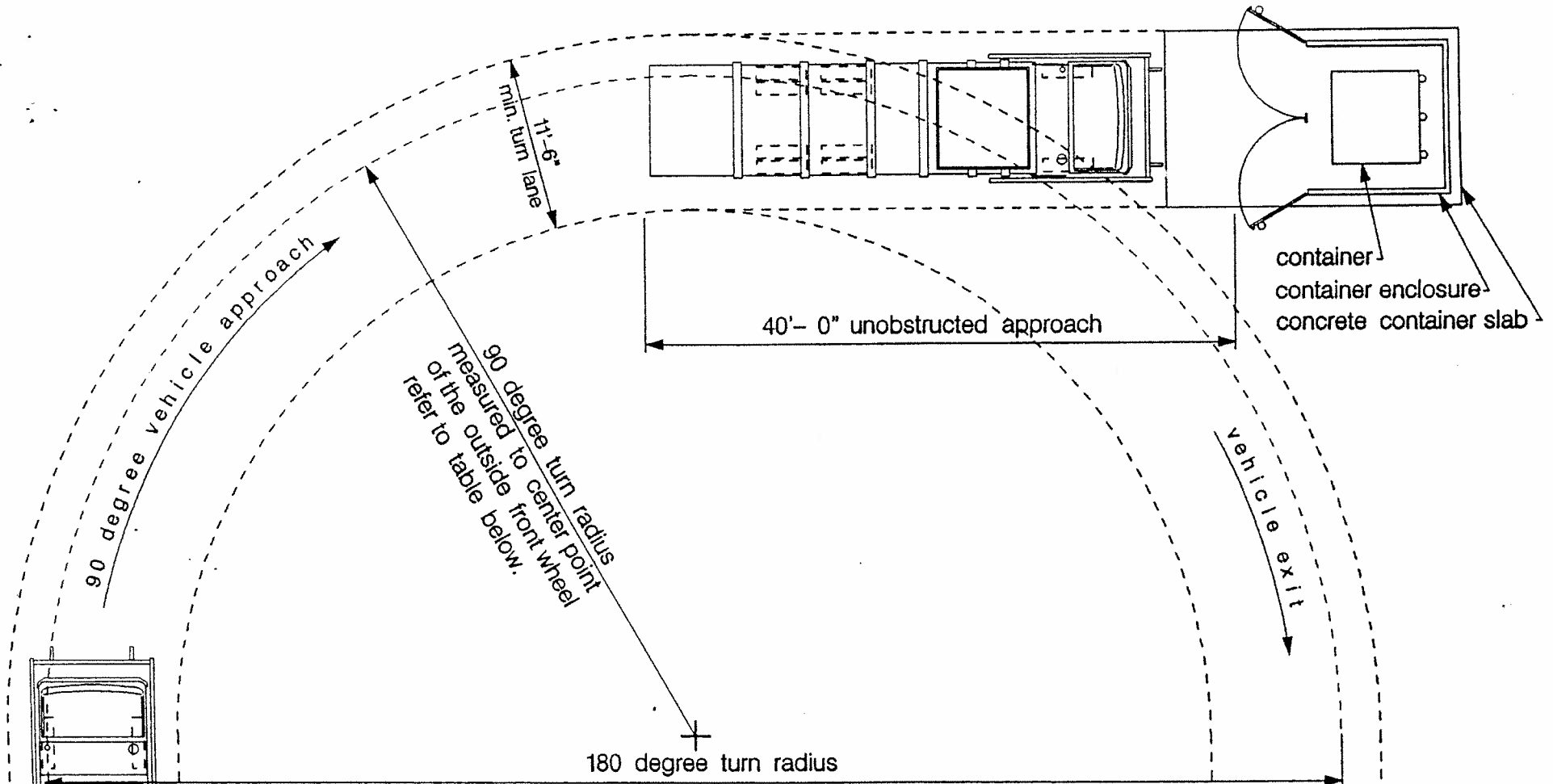


SIDE VIEW

NOTE: Vehicle shown is a 40 cu. yd. front end loading collection truck manufactured by Leach Company. Verify dimensions of actual vehicle.



Waste Management



COLLECTION VEHICLE APPROACH AND TURN RADIUS DIAGRAM

VEHICLE	90 DEGREE TURN RADIUS	180 DEGREE TURN RADIUS
Crane Carrier	36 Feet	72 Feet
White Expeditor WX64	45 Feet	90 Feet
Mack MR	38 Feet	76 Feet
Peterbilt	35 Feet	70 Feet

NOTE: verify actual required turning radiuses with vehicle manufacturer's specifications.



Waste Management



DATE: September 11, 2018

ODOT # 8599

ODOT Response to Local Land Use Notification

Project Name: Harmony Park Townhomes Phase II	Applicant: Steve Kay
Jurisdiction: City of Milwaukie	Jurisdiction Case #: DEV 2018-006
Site Address: 6115 SE Harmony Rd.	Legal Description: Tax Lot(s):
State Highway: 171/ OR 224	Mileposts: 2.4, 2.5, 2.9

The site of this proposed land use action is in the vicinity of OR 224/Hwy 171. ODOT has permitting authority for this facility and an interest in ensuring that this proposed land use is compatible with its safe and efficient operation. The site also abuts the Union Pacific Railroad. **Please direct the applicant to the District Contact indicated below to determine permit requirements and obtain application information.**

ODOT RECOMMENDED LOCAL CONDITIONS OF APPROVAL

Noise Advisory:

- The applicant is advised that a residential development on the proposed site may be exposed to traffic noise levels that exceed federal noise guidelines. Builders should take appropriate measures to mitigate this impact. It is generally not the State's responsibility to provide mitigation for receptors that are built after the noise source is in place.
- The applicant is advised that a residential development on the proposed site may be exposed to noise from heavy rail freight trains, passenger trains or transit vehicles. It is generally not the State's responsibility to provide mitigation for receptors that are built after the noise source is in

place. Builders should take appropriate measures to mitigate the noise impact as well as construct fencing between the lot and the railroad right of way to prevent illegal trespass onto the tracks.

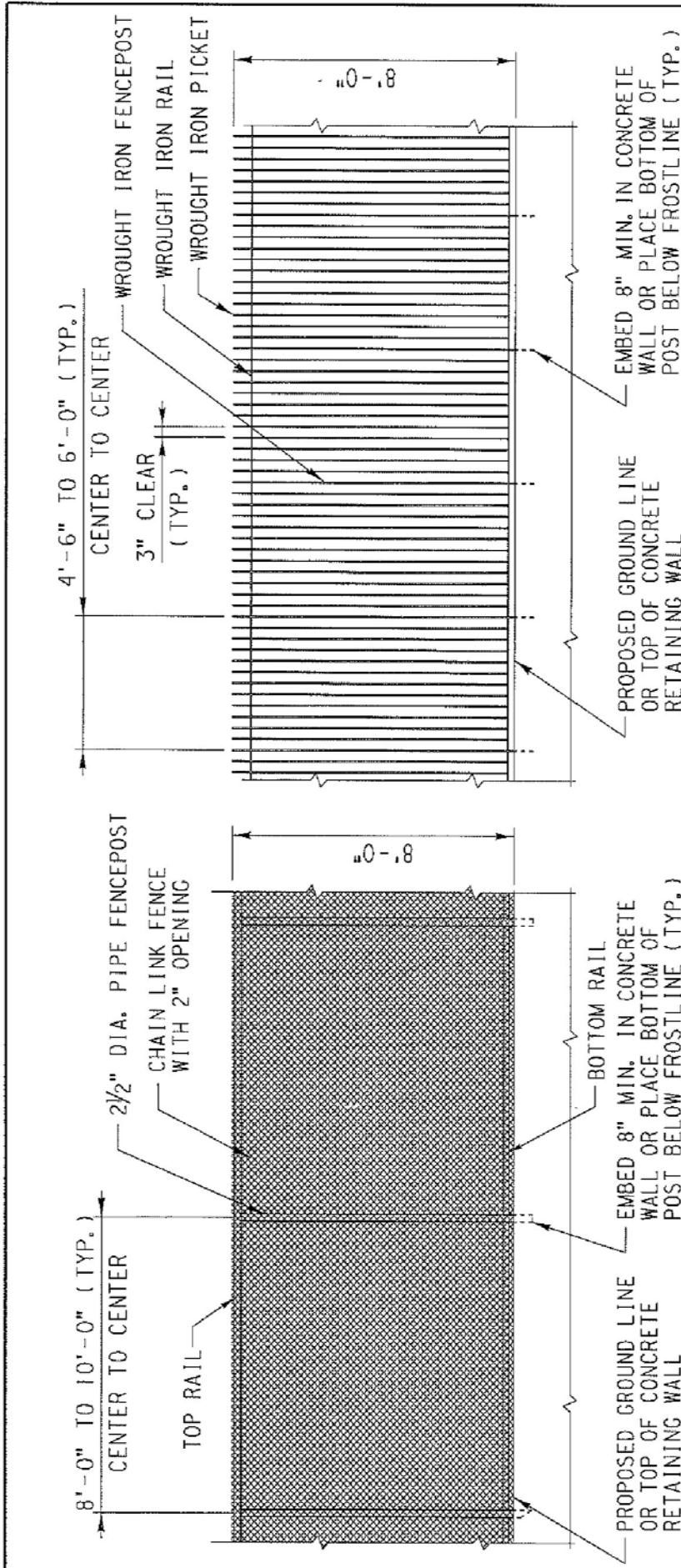
Comments:

Fencing may be required along the rail line property boundary. Details are attached. We have sent this proposed project notice to ODOT Rail and we are awaiting comments. They will be forwarded to the City and applicant upon receipt.

Please send a copy of the Notice of Decision including conditions of approval to:

ODOT Region 1 Planning
Development Review
123 NW Flanders St
Portland, OR 97209

Development Review Planner: P. Elise Scolnick, AICP	Phone: 503-731-8435
Traffic Contact: Avi Tayar, PE	Phone: 503-731-8221
District Contact: Aref Bozorgnia	Phone: 971-673-1268
ODOT Rail Contact: Richard Shankle	Phone: 503-986-4273



WROUGHT IRON PICKET FENCE

CHAIN LINK FENCE

FENCE ELEVATION

SCALE: 3/16" = 1'-0"

BNSF RAILWAY

UNION PACIFIC

BRIDGE STANDARDS

RIGHT-OF-WAY FENCING

FENCE DETAILS

FILE OWNER: UPRR DATE: 12/4/07

PLAN NO.: 711009 SHEET: 1

DATE	LTR.	DESCRIPTION	DESIGN BY: RAF	DRAWN BY: FJS	CHECKED BY: KHU
/	/				
/	/				
/	/				
/	/				
/	/				

APPROVED:

K.H. Jenkinson
BNSF - ASSISTANT DIRECTOR, STRUCTURES DESIGN

Burgis J. Moyn
UPRR - MGR SPECIAL PROJECTS/STRUCTURES DESIGN

Memorandum

TO: Brett Kelter, Planning Department
City of Milwaukie

FROM: Development Engineering, Kenneth Kent

DATE: September 12, 2018

RE: VR-2018-005 Harmony Park Townhomes PH II
12E31D 02200

This office has the following comments pertaining to this proposal:

FACTS AND FINDINGS:

1. The applicant has proposed construction of a 15-unit multifamily development on the north side of SE Harmony Road. SE Harmony Road is a major arterial roadway under the jurisdiction of Clackamas County.
2. Clackamas County has adopted roadway standards that pertain to the structural section, construction characteristics, minimum required right-of-way widths and access standards for major arterial roadways. Development applications are required to improve one half of the street cross section along the entire site frontage.
3. Based on access and driveway spacing standards, a shared access has been required for the properties along this portion of SE Harmony Road. Access to the project site is provided through a shared access with the property to the west to an existing driveway approach on to SE Harmony Road.
4. Minimum frontage improvements on the SE Harmony Road frontage include, but are not necessarily limited to, up to a half-street improvement, maintaining the existing curb off-set, and storm drainage facilities. In addition, standard curb or curb and gutter when curb line slope is less than one percent, a minimum six-foot wide unobstructed sidewalk behind a minimum five-foot wide landscape strip with street trees.
5. Applicant shall comply with County Roadway Standards clear zone requirements in accordance with Roadway Standards section 245 along the entire Harmony Road site frontage.

CONCLUSION

Although the County does not have land use jurisdiction over the proposed subdivision, the County does have jurisdiction over access and improvements along SE Harmony Road. However, the following recommended conditions reflect the County's minimum standards. Where the City's standards are greater, and do not otherwise conflict with the County's storm drainage standards and maintenance practices, the City's standard are acceptable.

If the City of Milwaukie approves the request, the following conditions of approval are recommended. If the applicant is advised to or chooses to modify the proposal in terms of access location and/or design following the preparation of these comments this office requests an opportunity to review and comment on such changes prior to a decision being made.

1. All frontage improvements in, or adjacent to Clackamas County right-of-way, shall be in compliance with *Clackamas County Roadway Standards*.
2. Prior to commencement of site work, a Development Permit and a Utility Placement Permit are required and must be obtained from Clackamas County for all work performed in the road right-of-way.
3. The applicant shall verify by a professional survey that adequate right-of-way width exists along the entire site frontage, on the northerly side of SE Harmony Road to permit construction of the required roadway and frontage improvements or shall dedicate additional right-of-way as necessary to provide it. A minimum of 6 inches shall be provided between the back of sidewalk and right-of-way.
4. All dedications or easements for SE Harmony Road shall be by separate document unless provided on a recorded plat. The applicant will need to have their surveyor prepare the required exhibits to provide to Sharan Hamms-LaDuca in DTD Engineering for review. They can be emailed to Shams-LaDuca@clackamas.us. Examples of the exhibits are available from Sharan.
5. The applicant shall grant an eight-foot wide public easement for signs, slopes, sidewalks and public utilities along the entire SE Harmony Road site frontage.
6. Access to the project site shall be limited to the existing driveway approach on Tax Lots 12E31D 02000 and 02100. No direct access to SE Harmony shall be permitted along the site frontage other than gated emergency vehicle access.
7. The applicant shall design and construct improvements along the entire site frontage of SE Harmony Road. These improvements shall consist of:
 - a. Up to an 18-foot wide, one half-street improvement shall be constructed along the entire site frontage to arterial roadway standards. The structural section for SE

Harmony Road improvements shall consist of 7 1/2 inches of asphalt concrete, per Clackamas County Roadway Standards Standard Drawing C100.

- b. Standard curb, or curb and gutter if curblin slope is less than one percent. The existing curb off-set shall be maintained
- c. Adjacent to the curb, a 5-foot landscape strip, including street trees shall be constructed along the entire site frontage.
- d. A minimum 6-foot wide unobstructed sidewalk shall be constructed along the entire site frontage, per Standard Drawing S960. The transition from curb-tight sidewalk to set-back sidewalk shall include panels at no greater than 45 degrees to the main direction of travel.
- e. The concrete driveway approach to the gated emergency vehicle access shall be constructed with a mountable curb, per Standard Drawing S180. The Fire District shall approve the gate and access design.
- f. The existing driveway drop shall be removed and replaced with curb and landscape strip.
- g. Drainage facilities in conformance with *Clackamas County Roadway Standards* chapter four.
- h. Applicant shall comply with County Roadway Standards clear zone requirements in accordance with Roadway Standards section 245 along the entire Harmony Road site frontage.

Brett Kelter

From: SCOLNICK Peggy E *Elise <Peggy.E.Scolnick@odot.state.or.us>
Sent: Friday, September 14, 2018 2:04 PM
To: Brett Kelter
Cc: BROOKING Joshua C
Subject: RE: ODOT Case # 8599 Harmony Park Townhomes Phase II

Hi Brett,

ODOT is recommending the fencing, not requiring it.

Have a great weekend!

Elise

P. Elise Scolnick, AICP
Planner, Development Review
ODOT Region 1
123 NW Flanders St.
Portland, OR 97209-4012
Office: 503-731-8435
Fax: 503-731-3266

From: Brett Kelter [mailto:KelterB@milwaukieoregon.gov]
Sent: Friday, September 14, 2018 1:18 PM
To: SCOLNICK Peggy E *Elise
Subject: RE: ODOT Case # 8599 Harmony Park Townhomes Phase II

Thanks, Elise. So, does this mean that fencing definitely will be required along the northern boundary, or is it just a recommendation?

One note would be that there is no bridge across the creek, so no planned activity on the side of the property adjacent to the railway, so I would assume no fencing is required. But is it different for residential projects than commercial ones?

BRETT KELVER
Associate Planner

From: SCOLNICK Peggy E *Elise <Peggy.E.Scolnick@odot.state.or.us>
Sent: Friday, September 14, 2018 10:32 AM
To: Brett Kelter <KelterB@milwaukieoregon.gov>
Subject: RE: ODOT Case # 8599 Harmony Park Townhomes Phase II

Hi Brett,

I did get a response from ODOT Rail, attached. There are no other comments other than the ones I already sent regarding noise and fencing.

MEMORANDUM

TO: Community Development Department
THROUGH: Charles Eaton, Director of Engineering
FROM: Alex Roller, Engineering Technician II
RE: VR-2018-005 - Harmony Apartment Phase II – 6115 SE Harmony Rd
DATE: September 14, 2018

Construct apartment building on vacant site.

1. MMC Chapter 12.08 – Street & Sidewalk Excavations, Construction, and Repair
 - A. This will apply to all construction that is completed in the Harmony right-of-way. The public improvement process will be completed under a Clackamas County development permit.
2. MMC Chapter 12.16 – Access Management

The Planning Commission finds that the following complies with applicable criteria of MMC Chapter 12.16.

- A. MMC Chapter 12.16.040 establishes standards for access (driveway) requirements.

12.16.040A: requires that all properties be provided street access with the use of an accessway.

Development will be taking access from taxlot 2100 & 2000 to the west. The only new access is a gated fire access. Spacing requirements and clear vision requirements will conform to Clackamas County Roadway Standards.

3. MMC Chapter 19.700 – Public Facility Improvements

The Planning Commission finds that the following complies with applicable criteria of MMC Chapter 19.700.

- A. MMC Chapter 19.700 applies to partitions, subdivisions, new construction, and modification or expansion of an existing structure or a change or intensification in use that result in any projected increase in vehicle trips or any increase in gross floor area on the site.

The applicant proposes to construct an apartment building on a currently vacant lot. The development triggers the requirements of MMC Chapter 19.700.

MMC 19.700 applies to the proposed development, but construction will be completed under a Clackamas County Development Permit.

4. Completion of a private stormwater maintenance agreement will be required upon completion of site construction. This recorded document will ensure that maintenance of the on-site storm facilities is properly maintained. This agreement will cover the maintenance requirements of the storm cartridge system. The maintenance requirements of existing utility easements on site will be covered

under this document as well. There are two utility easements on the development site that contain City of Milwaukie sewer mains. One is located on the north side of the property, and the other is located on the east side of the property. The construction of the building will limit access to the sewer manhole located near the east property line north of the proposed building. There is currently access to this manhole, but with the construction of the building, only pedestrian access will be provided. City crews will need access to the downstream manhole, which is located on the north property line. Property owner will be responsible for maintaining an 8-foot wide pathway clear of vegetation to provide access for City crews to regularly clean and inspect the sewer main lines located on site. Final language of maintenance requirements will be finalized with the maintenance agreement upon completion of building construction.

Recommended Conditions of Approval

1. Upon completion of building and site utilities, submittal of a private stormwater maintenance agreement is required. This agreement will be recorded with Clackamas county.

Brett Kolver

From: Jesse Tremblay <jtrem56@gmail.com>
Sent: Saturday, September 15, 2018 11:11 AM
To: Brett Kolver
Subject: Re: call for comments on VR-2018-005

Hi Brett,

I asked for the packet to continue to be mailed to me regarding land use proposals, so I could continue bringing it to the NDA meetings for general NDA review. If we had a packet to pass around, we would have had discussion amongst the group. As it is, we barely spoke about it.

Official response: The addition of 15 rental units helps keep rent increases down by adding to supply. Some members of the NDA have concerns about the increase of traffic to the already highly congested Railroad/Harmony/Linwood intersection.

On Fri, Sep 7, 2018 at 11:13 AM Brett Kolver <KolverB@milwaukieoregon.gov> wrote:

Hello,

A quick note to check in and see if any of you will have any comments to send for the proposed 15-unit apartment building at 6115 SE Harmony Rd. The original referral form is attached, with a list of applicable code sections and the project webpage.

The applicant provided some supplemental materials on Wednesday of this week, in response to items listed in the letter deeming the application complete. A PDF of these materials is attached for your reference.

If you could send me any comments on the proposal by early next week (Sept 10 or 11), that would be ideal.

Thank you!

BRETT KOLVER

Associate Planner

City of Milwaukie

o: 503.786.7657 f: 503.774.8236

Brett Kelter

From: Brett Kelter
Sent: Friday, September 14, 2018 4:44 PM
To: 'Joseph Edge'
Cc: Dennis Egner; Alex Roller; 'aargo23@gmail.com'; 'grau@nwhousing.org'; 'greghemermilw@gmail.com'; 'john.henry.burns@gmail.com'; 'kim.travis75@gmail.com'; 'scott.jns@gmail.com'
Subject: RE: VR-2018-005 Questions

Joseph,

Thanks for your questions. Here are some responses, sent to the entire Commission for their information and reference (as this correspondence becomes part of the official record):

- Bicycle Parking = I agree that the proposed arrangement may not meet the standards of MMC 19.609. This is a question that came up for me earlier, though I initially deferred to the applicant's intent to set a clear expectation for tenants that there would be space for storing a bike in each unit. I wondered about whether there would be issues with wet bikes making a mess in the units during the rainy season, as well as it being a challenge to haul a bike up to the 2nd or 3rd floor. I hadn't flagged this as an issue for them to deal with, but especially given the reminder I am inclined to suggest that a condition is needed to provide a ground-floor bike parking arrangement for each unit. Perhaps the attached garage can be a place where bikes can be locked to an internal rack or secured in some other way. Or maybe they can identify a space outside where a bike rack could be installed. Regardless, I do agree that this is an issue that needs address.
- Special Setbacks = In general, the special setbacks of MMC 19.501.2 are intended to ensure that there is enough room to accommodate future street widenings on major roads, if needed for things like a center turn lane. I'm not sure if or when any major changes will be made to this section of Harmony Rd.
- Preliminary Stormwater Analysis = There is an established methodology for conducting stormwater analysis, so it is not necessary for the Commission to condition specific methods (like setting a specific curve number). Staff will require that the correct/appropriate curve number be used for the final analysis, and then we will require adjustments to the plans to meet the stormwater requirements. It does seem fair for the Commission to ask whether staff believes the applicant can achieve the necessary stormwater management without radical changes to the site plan, especially where natural resource disturbance may be involved. In this case, we will require the applicant to modify the pre-development curve number and modify the plans accordingly; this review occurs at the time of building permit. According to our Engineering Department, the only change to the plans with this lower curve number would be a larger detention pipe. With the site plan as proposed, it doesn't look like the pipe could be longer, but it could be a larger diameter, or there could be a second parallel pipe.
- "Pre-development" standards for water quality vs water quantity = There are not different pre-development standards for water quantity and water quality. As I understand it, "pre-development" conditions are not a factor in the water quality assessment, because there is a set standard of quality that must be met today, regardless of what was on the site before. With water quantity, the issue is about the rate that a certain amount of water leaves the site, and since everyone is now supposed to use the "Lewis & Clark" pre-development standard as a starting point, the issue is more about whether an applicant is using the correct curve number for their analysis, as addressed in the point above.
- HCA mapping on the site = I believe the absence of HCA on the site has more to do with Metro's original mapping than with the site being annexed into the city in 2017. Interestingly, the City's Natural Resources (NR)

administrative map doesn't show any WQR or wetlands on this site, either. However, because the code (MMC 19.402.15) effectively says those WQR features are where certain definitions are met (e.g., if there is a perennial stream draining more than 100 acres, or a Title 3 wetland), they have to be considered and "appear" on the map. But with HCA, there is no requirement for an applicant to conduct a de novo review of a site to determine whether or where any HCA features may be—we simply start with whatever the NR map shows.

I hope this sufficiently addresses your questions for now. Some of these issues may receive further treatment in the forthcoming staff report.

A reminder to all Commissioners not to Reply All to this message. Since we need to avoid having a "meeting" outside of the public process, if you have follow-up questions to this email, please respond to me directly and I will formulate a new response that I'll send to the entire Commission.

BRETT KELVER

Associate Planner
City of Milwaukie
o: 503.786.7657 f: 503.774.8236
6101 SE Johnson Creek Blvd • Milwaukie, OR 97206

From: Joseph Edge <joseph.edge@gmail.com>
Sent: Thursday, September 13, 2018 3:35 PM
To: Brett Kelter <KelterB@milwaukieoregon.gov>
Subject: VR-2018-005 Questions

Hi Brett,

I have the following questions about the variance application (VR-2018-005) for the multifamily development on Harmony.

The bicycle parking standards in MMC appear to objectively describe a shared-use/common-area secured indoor bicycle parking facility. Is the ordinance language really loose enough to allow the bicycle parking standard to be met by providing a closet in each dwelling unit? Because I feel this is not in the spirit of the code and does not meet the purpose of the standard. I don't see the proposal indicating that the shared-use/common-area motor vehicle parking can be used for storage space for tenants who don't need to use all of the minimum required parking spaces that are allocated to their dwelling unit, so I don't know why this practice would be permitted for bicycle parking. This is a major sticking point for me, especially given the proximity to the planned North Clackamas Greenway Trail that will be constructed on Railroad Avenue and the presence of existing bicycle lanes on Harmony.

What is the purpose of the Harmony Road special setback? (General Exceptions > Yard Exceptions 19.501.2)

Also, once again, the preliminary stormwater analysis seems to be using too high of a curve number to represent the "pre-development" conditions. Does the PC have standing to condition a specific curve number for subsequent stormwater analyses? The pre-development site would be 100% wooded, so a curve number of no greater than 72 should be used to represent pre-development conditions for the entire subject site.

Is there a different "pre-development" standard for water quality vs. water quantity management facilities?

While there is WQR on the subject site, there does not seem to be any HCA. Is that due to the subject site having been annexed into the city only very recently? So the city's HCA map doesn't show detail for the subject site? Because there should be HCA to protect and buffer the WQR.

Thank you,

Joseph