Revised Date: **2 November 2023**

Brent Parrish
Lennar Homes

PROJECT: Beard Addition (#Z23-190PPUD), Spokane, Washington

SUBJECT: Critical Area Addendum

Dear Brent,

The City of Spokane (City) provided comments on this Project on 7 June 2023 that included review of the critical areas information as part of this application. Additionally, the Washington State Department of Ecology (ECY) provided comments on this Project via email dated 6 September 2023. This critical area addendum was prepared to address those comments and supplement the information provided in the 10 August 2022 *Wetland Assessment and Wetland Mitigation Plan* report prepared by Towey Ecological Services.

PREPARER QUALIFICATIONS

Field investigations were previously completed by other consultants, and the results of their work are presented within this and other referenced reports. No field delineations were completed by Wet.land, LLC staff.

This critical area addendum was prepared by Jennifer Marriott, PWS and Kristen Numata, PWS (**Attachment 1**).

Jennifer Marriott has a Bachelor's Degree and a Master's Degree in Biology from University of Central Florida, and a second Master's Degree in Soil and Environmental Science from the University of Florida. She has over 19 years of experience in wetland delineations and environmental permitting.

Kristen Numata has two Bachelor's Degrees in Biology and Environmental Science from Santa Clara University, and she has over seven years of experience in environmental consulting.

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2. Introduction

The Beard Addition is part of a larger Lennar Homes single-family residential development within the limits of the City of Spokane. The red polygon below is the approximate location of the larger project area for the residential development. A detailed assessment of critical areas was targeted for the yellow outlined parcels below. The findings of this assessment are detailed within the report prepared by Towey Ecological Services, dated 10 August 2022 (**Attachment 2**). This addendum only targets those areas identified through the Towey 2022 report, and does not extend the evaluation of critical areas beyond the area identified by Towey 2022.

Note that the onsite wetlands are unlikely to be jurisdictional to the US Army Corps of Engineers, especially in light of recent regulatory changes at the federal level, given their lack of surface hydrologic connection to offsite wetlands or streams.

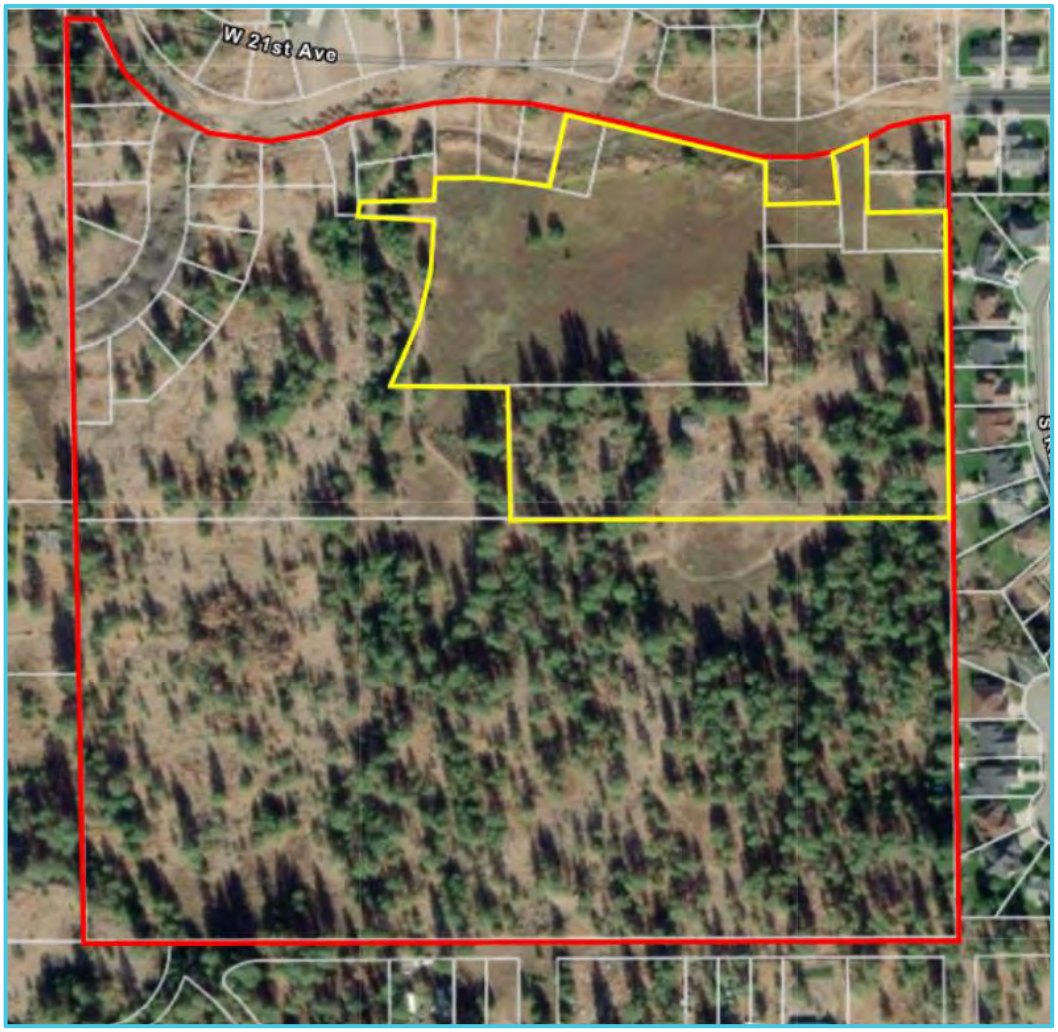

Figure 1. *Project Area (red) vs Project Site (yellow)*

3. Existing Conditions

3.1 Previous Wetland Delineation

The Towey 2022 report summarizes their findings, wetland delineations, ratings and datasheets documenting wetland and upland conditions on the Site. The Towey 2022 report includes the following wetlands (**Table 1**). The three (3) wetlands were rated as Category III wetlands with a habitat score of 5 with a standard buffer of 150 feet per the City of Spokane regulations.

Table 1. *Towey Ecological Services Critical Area Summary.*

Critical Area ID	Wetland Category (Habitat Score)	Standard Buffer (ft)[1]	Feature Type
A	III (5)	150	Palustrine emergent
B	III (5)	150	Palustrine emergent
C	III (5)	150	Palustrine emergent

[1] High Intensity Land Use

3.2 Wetland Delineation Concurrence

A joint agency meeting was held on 16 June 2023 with ECY and the project team, including Towey Ecological Services, at the Project Site. The wetland delineations were reviewed and agency members were in agreement that the wetland boundaries were accurate. No further comment is provided on the wetland delineations.

3.3 Modifications to Wetland Ratings

Wetlands A, B and C were all rated as Category III wetlands with a Habitat Score of 5. As part of our project preparation, we reviewed the wetland rating forms for consistency. A minor yet important revision is proposed to the wetland ratings for all three (3) wetlands. The landscape potential section (H 2.0) poses several questions about total accessible habitat, total undisturbed habitat, land use intensity, and annual rainfall. It appears the previous wetland ratings used hand drawn sketches to determine the ratios of these land use components. A more accurate assessment via a mapping exercise determined that the previous rating overestimated several important values. A discussion of the discrepancies is below.

Table 2 below outlines the existing habitat score and the revision. **Attachment 3** includes annotated versions of the wetland ratings with a land use intensity map (**Figure 1**).

Table 2. *Wetland Rating – Habitat Score Revisions*

Rating Question	Towey Selection	Wet.land Revision and Annotation
H 2.1 Accessible Habitat	**3 points** *>1/3 of 1 km polygon*	**2 points** *20 – 33% of 1 km polygon*

Rating Question	Towey Selection	Wet.land Revision and Annotation
		4% (accessible undisturbed) +38%/2 (moderate and low intensity/2) = 23%
H 2.2 Undisturbed Habitat	**2 points** *Undisturbed habitat 10 – 50% and in 1 – 3 patches*	**1 point** *Undisturbed habitat 10 – 50% and >3 patches* 12% (accessible undisturbed) +48%/2 (moderate and low intensity/2) = 36% More than 3 patches.
H 2.3 Land Use Intensity	**0 points** *<50% of 1 km polygon high intensity*	**0 points** *No change. High intensity makes up 40% of the polygon.*
H 2.4 Annual Precipitation	**0 points** *Annual rainfall is not less than 12"*	**0 points** *No change.*
Total Points	**5 points** *High*	**3 points** *Medium*

The previous land use intensity calculation did not accurately separate moderate and low intensity areas from relatively undisturbed habitats. The updated land use calculations have an impact on the wetland rating, as outlined below in **Table 3**. An updated existing condition map is provided in **Appendix 4** to show how the revised buffer interacts with the proposed site plan.

Table 3. *Wetland Rating Revisions*

Critical Area ID	Previous Wetland Category (Total Score) (WQ – Hydro – Habitat Points[1])	Previous Standard Buffer (ft)[2]	Revised Wetland Category (Total Score) (WQ – Hydro – Habitat Points[1])	Revised Standard Buffer (ft)[2]
A	III (16) 7 – 4 – 5	150	IV (15) 7 – 4 – 4	50
B	III (16) 7 – 4 – 5	150	IV (15) 7 – 4 – 4	50
C	III (16) 7 – 4 – 5	150	IV (15) 7 – 4 – 4	50

[1] Water Quality – Hydrology – Habitat

[2]High Intensity Land Use

4. Critical Area Impacts

The Client is proposing a subdivision with 296 single-family lots with the associated roads and infrastructure (**Attachment 4**). The Project will treat all stormwater consistent with City standards with two (2) outfalls proposed near Wetland A. The following critical areas impacts are proposed for the project:

- **Direct** Wetland Impacts (Wetland C fill) 19,424 square feet

No impacts are proposed to Wetlands A and B or their buffers. A previously outfall was designed that fell within the Wetland A buffer that has since been relocated outside of all critical areas.

4.1 Wetland C Impacts

Wetland C is proposed to be filled in its entirety, a total of 19,424 square feet (0.45-acre) of wetland fill to a Category III wetland, to accommodate the proposed Project footprint. An existing road stub is located in the northeast corner of the project area that dictates the location of the associated road that would be used for this development. Alternative public road alignments were evaluated in this area to determine if impacts to Wetland C could be avoided. However, given the topography in the area and the proximity of Wetland C to the existing public road stub, it was determined that avoiding Wetland C was not a viable option. The proposed public road bisects Wetland C such that indirect impacts, were even only the road to be accounted for, would extend to the entirety of the wetland for any reasonable mitigation action. Given the poor condition of Wetland C and the low habitat function provided by this wetland, based on the assessment by Towey Ecological Services, it was determined that including all of Wetland C as direct impacts and mitigate accordingly was the best path forward. Accordingly, additional parcels were included within the area of Wetland C around the proposed road.

WETLAND LEGEND

DESCRIPTION	WETLAND A	WETLAND B	PROPOSED	TOTALS
EX. WETLANDS AREA TO REMAIN	4,810 SF	9,181 SF	–	13,991 SF
WETLAND REPLACEMENT @ 2:1 FROM WETLAND C	–	–	38,716 SF REQ.	38,716 SF
TOTAL WETLAND AREA PROVIDED				52,707 SF
BUFFER TO REMAIN	12,993 SF	23,010 SF		36,003 SF
PROPOSED WETLAND BUFFER			22,796 SF	22,796 SF
TOTAL 50' BUFFER AREA				58,799 SF

***Figure 2**. Snip from Whipple Wetland Buffer Exhibit, Sheet 2 of 4 (8/17/2023)*

4.2 Wetland C Mitigation

Mitigation for the Wetland C impacts is proposed onsite and in-kind, consistent with the City regulations that prioritizes onsite/in-kind over offsite options. The 2022 Towey report outlines the gains to be had through the proposed mitigation plan through the wetland creation at a 2:1 ratio, supplemental plantings to the existing

wetlands to remain, as well as supplemental plantings to the wetland buffer. A 50-foot standard buffer will be extended around the created wetland so that the entire wetland complex of Wetlands A and B with the new wetland area will be properly buffered. No change in cowardin classification will result. Treated stormwater from the development will be used to supplement wetland hydrology beyond the existing condition.

The mitigation components for this Project include wetland creation, wetland enhancement, and buffer enhancement.

- Wetland Creation 38,716 square feet (0.89-acre)
- Wetland Enhancement 13,991 square feet (0.32-acre)
- Wetland Buffer Enhancement 58,799 square feet (1.35 acres)

The 2022 Towey report also outlines the reasoning behind the mitigation location and details – all targeting maximizing habitat quality and functions through one large contiguous wetland with supplemental hydrology from the Project's stormwater system. These mitigation actions all ensure that there is no net loss of wetland or buffer functions, values or no net loss of wetland area.

4.2.1 Mitigation Site Selection

The location of the mitigation was described in the 2022 Towey report, and includes a discussion on the analysis completed to finalize the mitigation location – particularly for the siting of the wetland creation. The overarching goal of habitat quality and improved functions and values, consideration of hydrology for a new wetland, as well ensuring connectivity of the critical areas post-development, were all factors considered in choosing the location for the wetland creation between the existing Wetlands A and B. Onsite mitigation was chosen over offsite mitigation options due to the existing conditions of Wetlands A and B. The low-quality baseline of both wetlands and the large area of open space between these wetlands allows for a larger, more complex wetland to be sited here where the wetland may have historically been larger under different hydrologic conditions. The stormwater outfalls located uphill of Wetland A will allow this treated stormwater to be used to hydrate the existing and new wetland areas.

4.2.2 Mitigation Ratios

Mitigation to compensate for the Wetland C fill is provided at a 2:1 replacement ratio, consistent with City requirements per SMC 17E.070.130.C.2, for a total 38,839 square feet of wetland creation proposed to be located between Wetlands A and B.

4.2.3 Supplemental Plantings

In addition to the area of wetland creation, Wetlands A and B will be enhanced in-situ with supplemental plantings of native plants. No change to the mitigation plantings previously provided (as prepared by Whipple) are proposed with this addendum. The wetland will be seeded with a wetland grass mix, while the adjacent uplands will be planted with a variety of woody shrubs and trees. Since the planting area will not change – the reduced buffer with the rating reassessment means that a much larger upland area than the wetland buffers will be supplementally planted.

5. Proposed Mitigation Plan

5.1 Agency Policies and Guidance

The proposed mitigation plan was designed in accordance with the policies and guidance provided in the following documents:

- Spokane Municipal Code, SMC Title 17E Environmental Standards;
- The Washington State Department of Ecology (ECY) Publication #21-06-003, Wetland Mitigation in Washington State – Part 1: Agency Policies and Guidance (Version 2), and Part 2 (Publication #06-06-011b): Developing Mitigation Plans (Version 1), dated March 2006 (Washington State Department of Ecology, U.S. Army Corps of Engineers Seattle District, and U.S. Environmental Protection Agency Region 10 2006a, 2006b); and
- The Federal Compensatory Mitigation for Losses of Aquatic Resources Final Rule (33 CFR Parts 325 and 332, April 10, 2008), effective June 9, 2008 (U.S. Army Corps of Engineers Seattle District and U.S. Environmental Protection Agency Region 10 2008).

All proposed mitigation shall be based on best available science and shall demonstrate no net loss of critical area functions and values.

5.2 Avoidance & Minimization (Mitigation Sequencing)

Mitigation sequencing has been applied to the proposed project pursuant to the mitigation definition and preferred sequence definition outlined in SMC 17E.070.130. The City mitigation sequencing requirements are as follows:

1. Avoiding the impact altogether by not taking a certain action or parts of an action;
2. Minimizing impacts by limiting the degree or magnitude of the action and its implementation, by using appropriate technology, or by taking affirmative steps to avoid or reduce impacts;
3. Rectifying the impact by repairing, rehabilitating or restoring the affected environment;
4. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action;
5. Compensating for the impact by replacing, enhancing, or providing substitute resources or environments; or
6. Monitoring the impact and the compensation project and taking appropriate corrective measures. Mitigation may include a combination of the above measures.

A detailed discussion of mitigation sequencing was discussed in the 2022 Towey report (pages 4-5). Additional details on critical areas avoidance and minimization measures were also outlined above in Section 4.2. Where impacts cannot be avoided, mitigation is provided to ensure no net loss of wetland area or function.

5.3 Proposed Mitigation Components

The mitigation components for this Project include wetland creation, wetland enhancement, and buffer enhancement.

- Wetland Creation 38,716 square feet (0.89-acre)
- Wetland Enhancement 13,991 square feet (0.32-acre)
- Wetland Buffer Enhancement 58,799 square feet (1.35 acres)

The proposed mitigation plan is included as **Attachment 5**, and was prepared by Whipple Consulting Engineers, Inc.

5.3.1 Wetland Creation

A wetland will be created between existing Wetlands A and B. Mitigation measures will include:

1. Grading area per Mitigation Plans (by Whipple);
2. Decompacting soils, scarify and amend with topsoil or compost, as determined necessary;
3. Planting a variety of native tree and shrub species; and
4. Installing critical area fencing and signs at buffer boundaries where required.

5.3.2 Wetland Enhancement

Enhancement of Wetlands A and B is proposed through supplemental plantings – a site appropriate wet-adapted seed mix will be applied to both Wetland A and B.

5.3.3 Buffer Enhancement

A planting plan is provided in **Attachment 5**. Proposed buffer enhancement measures include:

1. Clearing and grubbing all invasive, non-native weedy species in the enhancement areas;
2. Decompacting soils, scarify and amend with topsoil or compost, as determined necessary;
3. Installing 3 inches of bark mulch in all bare soil areas;
4. Planting a variety of native tree and shrub species; and
5. Installing critical area fencing and signs at buffer boundaries where required.

5.4 Mitigation Design Elements

5.4.1 Irrigation

An irrigation system will be provided for the proposed mitigation areas, though it is yet undetermined whether this will be a temporary or permanent system. The proposed irrigation system will be capable of full head to head coverage of all planted areas for the mitigation areas. The details of the irrigation system will be provided by Whipple Consulting Engineers.

5.4.2 Critical Area Fencing

Appropriate split rail fencing or equivalent will be installed around the perimeter of the onsite critical areas to deter human or pet intrusions into the mitigation site.

5.4.3 Plantings

All plantings will only be native species typical for the region that have been site located based on that species' tolerances for light, water, and soil type. A variety of tree, shrub, and herbaceous species have been chosen with the intent to provide structural and species diversity within the mitigation area. It is expected that natural recruitment of species occurring in the area will also occur and contribute to the species diversity and cover in the mitigation area.

5.5 Mitigation Goals, Objectives, and Performance Standards

The primary goal of the mitigation is to compensate for the direct impacts to Wetland C. To accomplish these goals, the proposed project will:

- Wetland Creation — 38,716 square feet (0.89-acre)
- Wetland Enhancement — 13,991 square feet (0.32-acre)
- Wetland Buffer Enhancement — 58,799 square feet (1.35 acres)

Mitigation actions will be evaluated through the following objectives and performance standards. See **Chapter 9** for a full description of the monitoring methods that will be used to evaluate the approved performance standards. Mitigation monitoring will be performed by a qualified biologist.

Objective A: Create 38,716 square feet of PEM wetland.

Performance Standard A1: At least 5 species of desirable native plant species will be present in the wetland. Species may be comprised of both planted and naturally colonized vegetation.

Performance Standard A2: Native emergent/Herbaceous cover will be at least 60% by Year 1, 80% by Year 3, and 90% by Year 5.

Performance Standard A3: At least 1 hydric soil indicator will be present by Year 5.

Performance Standard A4: After construction, the created wetland shall exhibit 14 or more consecutive days of ponding or a water table 12 inches or less below the soil surface during the growing season in each year of normal rainfall. At least 1 indicator of wetland hydrology will be present each year of the monitoring period with the expectation of inundation or saturation present between March 1 – May 15th of any monitoring year.

In addition, a combination of native or naturalized vegetation that is predominantly FAC or wetter will cover the wetland.

Objective B: Enhance 13,991 square feet of PEM wetland.

Performance Standard B1: At least 5 species of desirable native plant species will be present in the wetland. Species may be comprised of both planted and naturally colonized vegetation.

Performance Standard B2: Native emergent/Herbaceous cover will be at least 60% by Year 1, 80% by Year 3, and 90% by Year 5.

Objective C: Enhance 1.35 acres of wetland buffer.

Performance Standard C1: Percent survival of all installed woody species must be at least 100% at the end of Year 1 (per contactor warranty), and at least 80% at the end of Years 2 and 3.

Performance Standard C2: At least 3 species of desirable native plant species will be present in the buffer enhancement areas. Species may be comprised of both planted and naturally colonized vegetation.

Performance Standard C3: Native woody species (planted or volunteer) will achieve an average stem density of at least 3 stems per 100 square feet by the end of Year 1 and an average of at least 4 stems per 100 square feet by the end of Year 3. Total percent areal woody plant coverage in the buffer enhancement areas must be at least 35% by the end of Year 4 and 50% by the end of Year 5.

Objective D: Remove and control invasive plants to less than 10% cover in mitigation areas.

Performance Standard D1: After construction and throughout the performance monitoring period, areal coverage by non-native invasive plant species shall be maintained at 10% or less throughout the mitigation site.

Objective E: Year 5 Wetland Delineation

Performance Standard E1: At year 5, the created and enhanced wetland areas will be delineated using the currently approved federal wetland delineation manual and appropriate regional supplement to assure that the mitigation site contains at least 52,707 square feet of wetland.

6. Construction Sequencing

6.1 Mitigation Construction Sequencing

The following provides the general sequence of activities anticipated to construct this mitigation project. Some of these activities may be conducted concurrently as the project progresses.

- Conduct a site meeting between the Contractor, project Biologist or Ecologist, and the Owner's Representative to review the project plans, staging/stockpile areas, and material disposal areas.
- A pre-construction meeting with City staff will be required in advance of beginning any construction activities.
- Survey clearing limits.
- The project Biologist or Ecologist shall review clearing limits and shall flag trees and other existing vegetation to remain within the work area. They shall also flag any woody material to be saved and stockpiled for later use as habitat features (stumps, snags, down logs).
- Install silt fence and any other erosion and sedimentation control BMPs necessary for work in the project areas.
- Clear and grub designated areas to remove non-native, invasive species and any existing structures and infrastructure.
- Grade wetland creation area per civil/mitigation plans.
- Ensure a minimum of 12" of suitable soil is present where plantings are proposed. Import appropriate soil or amend existing soils, as needed or determined necessary.
- Plant cleared and grubbed areas per the planting typicals/plans.
- Mulch all grubbed and cleared areas and provide a three-inch-deep mulch ring around all container-planted material outside of wetland.
- Install irrigation system. Ensure that the system is capable of head-to-head coverage.
- Install critical area fencing and signs where designated.
- Complete site cleanup.

6.2 Post-Construction Approval

Once construction is approved, a qualified wetland ecologist shall conduct a post-construction assessment. The purpose of this assessment will be to establish baseline conditions at Year 0 of the required monitoring period. A Baseline Assessment report including "as-built" drawings will be submitted to all of the required agencies. The as-built plan set will identify and describe any changes in grading, planting, or other constructed features in relation to the original approved plan.

6.3 Post-Construction Assessment

The Permittee or representative shall notify the permitting agencies (City, ECY) when the mitigation plan has been fully installed and is ready for a final site inspection and subsequent final approval. Once final approval is obtained in writing, and "as-built" plans are approved, the monitoring period will begin.

7. Monitoring Plan

Performance monitoring of the mitigation areas will be conducted according to all applicable code/regulatory requirements and permit conditions. Monitoring will be conducted for up to five (5) years for the City and Ecology. Monitoring will be conducted according to the schedule presented in **Table 4** below, and will be performed by a qualified biologist or ecologist. The performance monitoring period will be complete when the mitigation site meets all performance standards, at which point one can conclude that the goals and objectives for the mitigation site have been met.

Table 4. *Projected Schedule for Performance Monitoring & Maintenance Events*

Year	Date	Maintenance Review	Performance Monitoring	Report Due to Agencies
Year 0 As-built and Baseline Assessment	Fall	X	X	X
1	Spring	X	X	
	Fall	X	X	X
2	Spring	X	X	
	Fall	X	X	X
3	Spring	X		
	Fall	X	X	X
4	Spring	X		
	Fall	X	X	X
5	Spring	X		
	Fall	X	X	X*

*Final approvals from the City may be requested to facilitate the release of any financial guarantees assuming performance criteria are met.

7.1 Monitoring Reports

Each monitoring report will adhere to the requirements of LMC 17.10.055. The reports will include: 1) Project Overview, 2) Requirements, 3) Summary Data, 4) Maps and Plans, and 5) Conclusions. Monitoring reports will be submitted to the City Planning Director and to Ecology by December 1st during the years in which monitoring is conducted.

7.2 Monitoring Methods

The following monitoring methods will be used to evaluate the mitigation site for compliance with the approved performance standards.

7.2.1 Vegetation Monitoring

Vegetation monitoring methods may include counts; photo-points; random sampling; sampling plots, quadrats, or transects; stem density; visual inspection; and/or other methods deemed appropriate by the permitting agencies. Vegetation monitoring components shall include general appearance, health, mortality, colonization rates, percent cover, percent survival, volunteer plant species, and invasive weed cover.

Permanent vegetation sampling plots, quadrats, and/or transects will be established at selected locations to adequately sample and represent all of the plant communities within the mitigation project areas. The number, exact size, and location of transects, sampling plots, and quadrats will be determined at the time of the baseline assessment and shown on a map for use in the baseline assessment report, as well as future annual monitoring reports.

Percent aerial cover of woody vegetation will be evaluated through the use of point-intercept sampling methodology. Using this methodology, a tape will be extended between two permanent markers at each end of an established transect. Trees and shrubs intercepted by the tape will be identified, and the intercept distance recorded. Percent cover by species will then be calculated by adding the intercept distances and expressing them as a total proportion of the tape length.

The established vegetation sampling locations will be monitored and compared to the baseline data during each performance monitoring event to aid in determining the success of plant establishment. Percent survival of shrubs and trees will be evaluated in a 10-foot-wide strip along each established transect. The species and location of all shrubs and trees within this area will be recorded at the time of the baseline assessment and will be evaluated during each monitoring event to determine percent survival.

7.2.2 Photo Documentation

Permanent photo stations will be established at a minimum of three (3) locations within the mitigation site from which panoramic photographs will be taken throughout the monitoring period. Photo-point locations will be shown on a map and submitted with the baseline assessment report and yearly performance monitoring reports. These photographs will document general appearance and relative changes within the plant community. Review of the photos over time will provide a semi-quantitative representation of success of the planting plan.

7.2.3 Wildlife

Direct and indirect observations of wildlife usage will be recorded during scheduled monitoring events. Direct observations entail actual sightings of the animal, while indirect observations include noticing tracks, scat, nests, or other indications of a species using the area.

7.2.4 Water Quality

Water quality will be visually observed during scheduled monitoring events for a qualitative assessment that is only intended to notice obvious discrepancies from expected conditions. No water quality sampling is proposed in conjunction with this parameter. Qualitative water quality assessment parameters include oil sheens (or other surface films); abnormal color or odor of water; stressed or dead vegetation or aquatic fauna, if present; or obvious turbidity.

7.2.5 Site Stability

General observations of slope stability in the mitigation site will be made during each scheduled monitoring event. Any observations of unexpected erosion will be recorded and discussed with appropriate Team members or Agency staff to determine any necessary corrective measures.

8. Maintenance Plan and Contingency Measures

Regular maintenance reviews will be performed according to schedule presented in **Table 4** as part of the performance monitoring program to address any conditions that could jeopardize the success of the mitigation project. Required maintenance on the site will be implemented within ten (10) business days of submission of a maintenance memo to the maintenance contractor and permittee.

The established performance standards identified in Section 7.5 (above) will be compared to the yearly monitoring results to evaluate the success of the mitigation. Adjustments to the mitigation will be made as needed based on these regular evaluations to bring the mitigation back on track for success.

The following list includes examples of maintenance (M) actions that may be implemented during the course of the monitoring period. This list is not intended to be exhaustive, and other actions may be implemented as deemed necessary.

- Replace all dead woody plant material during Year One (M).
- Remove/control weedy or exotic invasive plants in a manner consistent with current Agency guidelines and recommendations. Use of herbicides or pesticides within the mitigation area would only be implemented if other measures failed or were considered unlikely to be successful and would require prior agency approval. All non-native vegetation must be removed and disposed of off-site (M).
- Weed all trees and shrubs to the dripline and provide 3-inch deep mulch rings 24 inches in diameter for shrubs and 36 inches in diameter for trees (M).
- Remove trash and other debris from the mitigation areas twice a year (M).
- Selectively prune woody plants at the direction of Project Ecologist or Biologist to meet the mitigation plan's goal and objectives (e.g., thinning and removal of dead or diseased portions of trees/shrubs) (M).
- Repair or replace damaged structures including signs, or bat/bird boxes (M).

If, during the course of the monitoring period, there appears to be a significant problem with achieving the performance standards, the permittee shall work with the City and other permitting agencies to develop a Contingency Plan in order to get the project back into compliance with the performance standards. Contingency plans can include, but are not limited to, the following actions: additional plant installation, erosion control, bank stabilization, modifications to hydrology, and plant substitutions of type, size, quantity, and/or location. If required, a Contingency Plan shall be submitted to the City by December 1st of any year when deficiencies are discovered.

The following list includes examples of contingency (C) actions that may be implemented during the course of the monitoring period. This list is not intended to be exhaustive, and other actions may be implemented as deemed necessary.

- Replace dead plants with the same species or a substitute that meets mitigation plan goals and objectives, subject to project Biologist/Ecologist and agency approval (C).
- Re-plant area after reason for failure has been identified (e.g., moisture regime, poor plant stock, disease, shade/sun conditions, wildlife damage, etc.) (C).

- After consulting with City staff and other permitting agencies, minor excavations, if deemed to be more beneficial to the existing conditions than currently exists, will be made to correct surface drainage patterns (C).

9. Long-Term and Adaptive Management Plans

Long-term maintenance of the Site will be handled in conjunction with the Site landscape management, as determined appropriate. It is anticipated that minimal hands-on maintenance will be required of these natural areas after the 5-year performance monitoring period. However, the mitigation areas will be evaluated periodically for unnatural or non-native disturbances, including, but not limited to, invasive species and human impacts, such as trash.

The maintenance, contingency action, long term- and adaptive management plans are all intended to be adaptive in nature to respond to the changing conditions of the mitigation site. These elements are intended to be broad in nature and allow a wide variety of action depending on what is best for the mitigation site based on the issues at that time. Any action that requires more than minor modifications to the mitigation site would be discussed with appropriate Agency staff prior to action being taken.

10. Financial Guarantees and Site Protections

Per SMC 17E.070.130.E.8, financial guarantees may be required by the City for no less than 125 percent of the estimated cost of the mitigation project.

The mitigation areas will be protected post-construction through installation of critical areas fencing around the perimeter of the critical areas to deter human entry into the mitigation Site, as well as through identification of the mitigation area in a separate tract for the City. A deed restriction, or similar device, will be recorded with the City to clearly identify the mitigation site in perpetuity.

11. Summary

The proposed project includes a subdivision with single-family lots located in Spokane, Washington. The wetland ratings were reevaluated and determined to be more accurately reflected as Category IV wetlands with a Habitat Score of 4 and a standard buffer of 50 feet. The project proposes 19,424 square feet of direct wetland fill to Wetland C to accommodate the necessary road and adjacent parcels. Compensation is provided through wetland creation at a 2:1 ratio, enhancement of Wetlands A and B, and enhancement of the onsite wetland buffers. These combined efforts will ensure there will be no net loss of wetland or buffer functions or area. Performance monitoring will be provided consistent with City standards.

Should you have any questions or require additional information regarding this Project, please contact me at *jen@wet.land* (cell: 813-846-1684).

Jennifer Marriott, PWS
Owner, Wet.land, LLC

Attachments:

1. Resumes
2. Wetland Assessment and Wetland Mitigation Plan, Towey Ecological Services, 10 August 2022
3. Annotated Wetland Ratings with Land Use Figure
4. Figures
    1. Existing Conditions Map
    2. Proposed Site Plan
5. Mitigation Plan, Whipple Consulting Engineers, Inc.

Attachment 1

Jennifer Marriott, PWS – Resume

Kristen Numata, PWS - Resume

Jennifer M. Marriott, PWS

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QUALIFICATIONS

- Master of Science, Soil Science, University of Florida, Gainesville, FL, 2010
- Master of Science, Biology (Ecology), University of Central Florida, Orlando, FL, 2003
- Bachelor of Science, Biology, University of Central Florida, Orlando, FL, 2001
- Professional Wetland Scientist (No. 1891)

FOCUS AND EXPERTISE

- Project Management
- Project Summaries and Rapid Environmental Due Diligence Reports
- Wetland and Stream Delineations/Habitat Evaluation
- Wetland (Critical Areas) Permitting
- Mitigation Planning
- Wetland Functional Assessment
- Hydric Soil Determinations
- Training and mentoring of Junior staff.

EXPERIENCE

- Senior Ecologist/Owner; Wet.land, LLC; March 2020 - Present
- Senior Ecologist/Project Manager; Talasaea Consultants, Inc.; June 2015 – March 2020
- Senior Project Scientist; BL Companies, Inc.; July 2012 – July 2014
- Environmental Scientist 3; RETTEW Associates, Inc.; March 2011 – February 2012
- Ecologist; Cardno-ENTRIX, Inc. (formerly known as ENTRIX, Inc., fka Biological Research Associates); July 2003 – March 2011

SKILLS, TRAINING & PROFESSIONAL MEMBERSHIPS

- Washington (Coastal Training Program Workshops)
    - Revised Washington State Wetland Rating System, 2014 (April 2015)
    - Using the Credit-Debit Method for Estimating Mitigation Needs (October 2015)
    - Using Field Indicators for Hydric Soils (November 2015)
    - Grass, Sedge, and Rush Identification for Western WA Puget Lowland Habitats (March 2016)
    - How to Determine the Ordinary High Water Mark (September 2016)
- Other Technical Training
    - Soil Workshop, PAPSS, 2011
    - Hydric Soils Workshops, 2004, 2008, 2009
    - FAESS Florida State Certification Short Course, March 12-13, 2009

Kristen Numata, PWS

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QUALIFICATIONS

- Wetland Science and Management Certificate, University of Washington Professional Continuing Education, Seattle, WA, 2016
- Bachelor of Science, Biology, Santa Clara University, Santa Clara, CA, 2014
- Bachelor of Science, Environmental Science, Santa Clara University, Santa Clara, CA, 2014
- Professional Wetland Scientist (No. 3412)
- Certified Erosion and Sediment Control Lead (No. 70592)

FOCUS AND EXPERTISE

- Critical Areas Delineations and Site Assessments
- Wetland Functional Assessment
- Geographic Information Systems
- Critical Area Permitting
- Mitigation Planning and Performance Monitoring
- Environmental Compliance and Construction Oversight

EXPERIENCE

- Ecologist/Owner; Wet.land, LLC; January 2022 – Present
- Project Biologist; PBS Engineering and Environmental, Inc.; July 2019 – December 2021
- Biologist/Environmental Scientist; David Evans and Associates, Inc.; July 2018 – July 2019
- Ecologist; Talasaea Consultants, Inc.; July 2015 – July 2018

SKILLS, TRAINING & PROFESSIONAL MEMBERSHIPS

- Washington (Coastal Training Program Workshops)
    - Revised Washington State Wetland Rating System, 2014 (March 2016)
    - Using the Credit-Debit Method for Estimating Mitigation Needs (April 2017)
    - How to Determine Ordinary High Water Mark (June 2017)
    - Grass, Sedge, and Rush Identification for Western WA Puget Lowland Habitats (February 2018)
    - Winter Tree and Shrub Identification for Western WA Puget Lowland Habitats (February 2019)
    - Navigating SEPA (March 2019)
- Other Technical Training
    - Junior Author, Washington State Department of Transportation (WSDOT) Biological Assessment Preparation for Transportation Projects Training (March 2020)
    - Fish Passage: Inventory and Assessment, Washington Department of Fish and Wildlife, (WDFW) (August 2020)
    - Fish Passage: Habitat Survey, WDFW (August 2020)

Attachment 2

Wetland Assessment and Wetland Mitigation Plan, Towey Ecological Services, 10 August 2022

Wetland Assessment and Wetland Mitigation Plan
Westridge Addition
City of Spokane, Washington

August 10, 2022

Prepared for

WCE, Inc.

Prepared by:

Towey Ecological Services
24211 S. Harmony Rd.
Cheney, WA 99004
509-939-5203

Introduction

This assessment was authorized to properly categorize wetlands and their buffers pursuant to the *Spokane Municipal Code Title 17E (Code)*. The assessment was performed to provide guidance for the proper design layout for a proposed development. The assessment was performed within parcels 25263.0051, 25263.3103, 25263.3003, 25263.3002, 25263.2907 and 25263.2906. The Code provided guidance on wetland protection (Chapter 17E.070) and wetland mitigation (Section 17E.070.130). A mitigation plan, herein, provides recommendations for the proposed project disturbances to the wetland and wetland buffer.

The investigation was conducted on June 15, 2022. The primary investigator was William T. Towey, a Qualified Wetland Specialist.

Methods

Wetland areas were assessed using criteria and guidance specified in the *Code,* the *U.S. Army Corps of Engineers Wetland Delineation Manual* (USACOE 1987), the National Wetland Inventory Map (attachment 1), the Natural Resources Conservation Service aerial soil surveys (attachment 2) and the *2014 Eastern Washington Wetland Rating and USACOE Arid West Forms* (attachment 3) and Site Plans (attachment 4).

Wetlands identified within the project area were categorized and vegetative communities and general hydrology noted. Pink flagging was used to designate the outer extent of the wetland buffer areas and the soil pits for each wetland. The flagged points were surveyed and transferred to a base site plan to guide layout and mitigation recommendations.

Results and Discussion

The assessment identified three depressional wetlands within the proposed project area. A summary of information (including the designation, category and buffer) of the wetlands is provided in Table 1.

Designation.	Category	Required Buffer
Wetland (Depressional) A	Category 3	150' (high impact)
Wetland (Depressional) B	Category 3	150' (high impact)
Wetland (Depressional) C	Category 3	150' (high impact)

Table 1- Summary of Identified Wetlands

Wetland Assessment

Wetland A- A Category III Depressional Wetland was identified. The wetland is identified on the National Wetland Inventory Map as a PEM1C (Palustrine, Emergent, Persistent, Seasonally Flooded). The wetland scored a total of 16 points (7 points Improving Water Quality, 4 points Hydrologic and 5 points Habitat), utilizing the *2014 Eastern Washington Wetland Rating System.*

Wetland Vegetation- The wetland is characterized by reed canarygrass (*Phalaris arundinacea*), equisetum (*Equisetum hyemale*), and goldenrod (*Solidago* spp.).

Upland Vegetation- The dominant species consists of mullein (*Verbascum thapsus*), wild rose (*Rosa* spp.), upland grasses, hounds-tongue (*Cynoglossum officinale*), yarrow (*Achillea millefolium*), thistle (*Cirsium arvense*), and goldenrod.

Soils- Cocolalla-Hardesty complex (see Arid West data form)

Hydrology- The hydrology is provided by the adjacent topography and suspected high water table. The localized hydrology has likely been affected by surrounding development (reduced quantity and duration of inundation). Evidence of reduced hydrology included the establishment of upland plants in areas that were likely historical wetlands.

Upland/Wetland Transition- The wetland area is defined by a very gradual slope, wetland vegetation and saturated soils. The wetland vegetation transitions to upland vegetation with <50% OBL, FACW or FAC designations. In addition to the plant criteria used to delineate the wetland area, the upland/wetland transition was determined by digging several soil pits to determine the presence/absence of hydric soils.

Wetland B- A Category III Depressional Wetland was identified. The wetland is identified on the National Wetland Inventory Map as a PEM1C (Palustrine, Emergent, Persistent, Seasonally Flooded) The wetland scored a total of 16 points (7 points Improving Water Quality, 4 points Hydrologic and 5 points Habitat), utilizing the *2014 Eastern Washington Wetland Rating System.*

Wetland Vegetation- The wetland is characterized by reed canarygrass, equisetum and goldenrod.

Upland Vegetation- The dominant species consists of mullein, wild rose, upland grasses, hounds tongue, yarrow, thistle and upland grasses.

Soils- Cocolalla-Hardesty complex (see Arid West data form)

Hydrology- The hydrology is provided by the adjacent topography and suspected high water table. The localized hydrology has likely been affected by surrounding development (reduced quantity and duration of inundation). Evidence of reduced hydrology included the establishment of upland plants in areas that were likely historical wetlands.

Upland/Wetland Transition- The wetland area is defined by a very gradual slope, wetland vegetation and saturated soils. The wetland vegetation transitions to upland vegetation with <50% OBL, FACW or FAC designations. In addition to the plant criteria used to delineate the wetland area, the upland/wetland transition was determined by digging several soil pits to determine the presence/absence of hydric soils.

Wetland C- A Category III Depressional Wetland was identified. The wetland is identified on the National Wetland Inventory Map as a PEM1C (Palustrine, Emergent, Persistent, Seasonally Flooded). The wetland scored a total of 16 points (7 points Improving Water Quality, 4 points Hydrologic and 5 points Habitat), utilizing the *2014 Eastern Washington Wetland Rating System.*

Wetland Vegetation- The wetland is characterized by reed canarygrass, sedge (*Carex* spp.), equisetum, goldenrod.

Upland Vegetation- The dominant species consists of mullein, wild rose, upland grasses, hounds tongue, yarrow, thistle and goldenrod.

Soils- Cocolalla-Hardesty complex (See Arid West data form)

Hydrology- The hydrology is provided by the adjacent topography and suspected high water table. The localized hydrology has likely been affected by surrounding development (reduced quantity and duration of inundation). Evidence of reduced hydrology included the establishment of upland plants in areas that were likely historical wetlands.

Upland/Wetland Transition- The wetland area is defined by a very gradual slope, wetland vegetation and saturated soils. The wetland vegetation transitions to upland vegetation with <50% OBL, FACW or FAC designations. In addition to the plant criteria used to delineate the wetland area, the upland/wetland transition was determined by digging several soil pits to determine the presence/absence of hydric soils.

Wetland and Wetland Buffer Mitigation Plan

Introduction-

A wetland assessment was performed within 7 acres of (see attached site plans and attachments) on June 15, 2022. Three wetlands were identified as jurisdictional under the Spokane Municipal Code. The three Category 3 wetlands were labeled A, B and C (see attachment 4). The proposed mitigation wetland is designed at a re-establishment or creation ratio 2:1 (acreage of wetlands requiring replacement:acreage of wetlands altered); whereas the wetland buffer will be established at 150' (Category III wetland-high impact). The wetland mitigation area will be utilized for pretreated storm water detention and has been designed using applicable local and state standards. The recommendations contained herein are consistent with the wetland mitigation provisions of the Spokane Municipal Code.

The current wetlands (A, B and C) and their respective wetland buffers all have low habitat function and values based on a monoculture of grasses and small shrubs. It appears that hydrology has lessened in recent years due to the encroachment of development adjacent to the property. The once historical contiguous wetland area has been transitioning over time to upland area, dominated by upland plants caused by the lack of hydrology. The intent of the proposed wetland cell is to re-establish the contiguous wetland and its associated buffer.

The field assessment included a function analysis that compared existing conditions to the proposed wetland mitigation area to ensure functions and values will be enhanced. The proposed mitigation area was chosen for its suitable soils, topography, and high water table. Increased hydrology will be available to the mitigation area by routing pre-treated stormwater. Storm drainage calculations were completed as necessary components to the wetland mitigation plan.

Mitigation Sequencing-

The mitigation plan utilized guidance of section 17E.070.130 of the Spokane Municipal Code. The plan addresses mitigation sequencing as follows:

1. Avoiding the impact altogether by not taking certain action or parts of an action- The project design recognized that the resulting wetland mitigation measures would improve overall function and value of the project area. The recommended action of increasing the overall contiguous portion of the wetland area and providing increased hydrology (quantity and duration) will ensure higher function and value over current

conditions. The project does not avoid impact by taking no action, rather it is designed to provide improved wetland function and value.

2. Minimizing impacts by limiting the degree or magnitude of the action and its implementation, by using appropriate technology, or by taking affirmative steps to avoid or reduce impacts- The project design has reduced impacts by protecting areas that can function as a connected system with native plant enhancements and measures to connect hydrology that has been historically disrupted by development in the surrounding area.

3. Rectifying the impact by repairing, rehabilitating or restoring the affected environment- The mitigation plan rectifies the identified impacts by restoring and enhancing the environment with native plantings and hydrology connectivity.

4. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action- The protection of the proposed wetland enhancement areas, including wetland buffers and connection of hydrology, will reduce or eliminate the impact over time.

5. Compensating for the impact by replacing, enhancing, or providing substitute resources or environments- The project recommends enhancement measures to increase habitat diversity, hydrologic connectivity and long-term protection of a contiguous wetland area.

6. Monitoring the impact and the compensation project and taking appropriate corrective measures. Mitigation may include a combination of the above measures- The mitigation plan specifies a long-term monitoring plan to ensure survivability and success of the mitigation measures.

Mitigation Replacement Values-

A total of 19,340 square feet of wetland C has been identified for replacement. The proposed wetland replacement area equals 38,680 square feet (2:1)[1]. The one contiguous wetland cell (replacement for Wetland C, Wetland A and Wetland B) is 52,450 square feet (see attachment 4). The proposed replacement wetland will have a 150' buffer (to include Standard Buffer Width Averaging[2]) to ensure adequate protection of the function and values of the wetland. In addition to the increased wetland and buffer areas and additional hydrology, the proposed wetland and buffer areas will be treated with native plant enhancements that will increase function and value over existing conditions.

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[1] Utilizing Table 17E.070.130-1 of Section 17E.070.130 of the Spokane Municipal Code (Re-establishment or Creation)

[2] Standard Buffer Width Averaging (*Section 17W.070.110*) will be applied to a portion of the proposed wetland buffer. The proposed buffer width will not be reduced by more than fifty percent of the standard buffer or be less than twenty-five feet.

Identification of Suitable Mitigation Area-

A mitigation site suitability assessment was performed based on: 1) habitat connectivity; 2) source of water; 3) soil conditions; and 4) proposed land use.
The area identified for the creation of the new wetland cell was based on providing a contiguous wetland area associated with the delineated wetlands A, B and C. It is suspected that adjacent development has reduced the overall hydrology to the area and that the wetlands that currently exist have been fragmented. The intent is to return some level of hydrology to support the new wetland cell and proposed vegetative plantings.

The area is currently characterized by a high-water table and the hydrology will be sustained and increased by providing pretreated stormwater runoff from the adjacent topography. Due to the naturally high ground water table and the suitable existing soils, the area is very conducive to re-establishing a vegetative buffer around the constructed wetland area. The recommended contiguous wetland and vegetated buffer areas will improve upon the habitat function and values relative to current conditions.

Recommended Mitigation Actions-

Constructed Wetland Cell- In order to properly mitigate for the replacement of portions of wetland C, one contiguous wetland cell (see attached drawings) was designed based on the available high water table and projected volumes of stormwater drainage from the proposed development.

Vegetation Buffer- In order to establish properly functioning conditions and increased habitat function and values within the identified mitigation area, a native plant design is recommended for the wetland buffer areas (see constructed wetland designs). The buffer areas will consist of thinleaf alder (*Alnus tenuifolia*), quaking aspen (*Populus tremuloides*), serviceberry (*Amelanchier alnifolia*), dogwood (*Cornus stolonifera*), mockorange (*Philadelphus lewisii*), chokecherry (*Prunus virginiana*), golden currant (*Ribes aureum*), rose (*Rosa woodsii*), dune willow (*Salix hookeriana*) and snowberry (*Symphoricarpos albus*). In addition to the native trees and shrubs, the mitigation area will include grass hydroseeding. The grass seed in wetter conditions will utilize a mix of blue wild rye *(Elymus glaucus*), western mannagrass (*Glyceria occidentalis*), meadow barley (*Hordeum brachyantherum*), American sloughgrass (*Beckmannia syzigachne*) and tufted hairgrass (*Deschampsia cespitosa*). Drier site conditions will utilize a mix of smooth brome (*Bromus inermis Leyss*), crested wheatgrass (*Agropyron cristatum*), tall fescue (*Festuca arundinacea*) and Dahurian wildrye (*Elymus dahuricus*).

Species	Quantity
Thinleaf alder	85
Quaking aspen	87
Serviceberry	113
Dogwood	410
Mockorange	52
Chokecherry	112
Golden currant	52
Rose	197
Dune willow	146
Snowberry	294

Detailed prescriptions and specifications for the implementation of the mitigation actions are outlined in the *Landscape Notes* provided in the mitigation design drawings.

Performance Standards- Trees and shrubs shall consist of large, commercially obtained nursery stock per WDFW and USACOE specifications, shall be regularly watered with an installed drip system and maintained until established (including regular weeding to keep plants from being shaded out or out-competed by weeds, and fully replaced as necessary for a period of at least five years). A minimum of eighty percent survival rate by the end of the third growing season will be required (WDFW guidelines).

Long-Term Preservation- Due to the close proximity of human activity, it is necessary to protect the mitigation area post re-vegetation. The planting areas will be protected by fencing. This recommendation will minimize foot traffic and will allow for successful re-vegetation of the area.

As-Built Documentation- Upon completion of the constructed wetland cell and re-vegetation, a qualified wetland biologist will provide an as-built design and photo-documentation to the City of Spokane. This documentation will serve as the basis for ongoing yearly documentation standards.

Monitoring and Evaluation- The mitigation areas will have established photo-documentation reference points. Additionally, an as-built photo will be taken to begin the series of post-implementation documentation. These reference points represent baseline habitat conditions and can be used to monitor the mitigation area through time. It is recommended that the mitigation area be photographed and a status of the performance standards be submitted to the City of Spokane on an annual basis for a minimum of five years. This monitoring will ensure that the mitigation area is being properly maintained and that properly functioning conditions are present within the wetland and wetland buffer areas.

REFERENCES

Washington Department of Ecology (WDOE). 2004. *Guidance on Wetland Mitigation-Part 2*. Publication 04-06-013b.

Washington Department of Fish and Wildlife (WDFW). *General Native Riparian & Shrub Steppe Planting Prescriptions for Shoreline Areas of the Columbia River.* WDFW Region 2 Publication.

U.S. Fish and Wildlife Service

National Wetlands Inventory

Parcel #25263.2907

March 15, 2022

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)

Attachment 1

Soil Map—Spokane County, Washington
(21st Assessment)

Map Scale: 1:2,030 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 30 60 120 180

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

Attachment 2

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

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.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

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.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Spokane County, Washington
Survey Area Data: Version 13, Aug 23, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 12, 2020—Aug 14, 2020

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.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
1021	Cocolalla-Hardesty complex, 0 to 3 percent slopes	7.0	42.2%
3115	Northstar-Rock outcrop complex, 3 to 15 percent slopes	7.0	42.5%
7131	Urban land-Northstar, disturbed complex, 3 to 8 percent slopes	2.5	15.3%
Totals for Area of Interest		**16.5**	**100.0%**

Attachment 3

Wetland name or number "A"

RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): "A" - 21st Project Date of site visit: 6/15/22

Rated by William T. Towey Trained by Ecology? X Yes ___ No Date of training 04/16/15

HGM Class used for rating Depressional Wetland has multiple HGM classes? ___ Y X N

NOTE: Form is not complete without the figures requested (*figures can be combined*).

Source of base aerial photo/map Google Earth, NWI Map, Soil Map, PHS info HGM Map - 1 Km - Map

OVERALL WETLAND CATEGORY III (based on functions___ or special characteristics___)

1. Category of wetland based on FUNCTIONS

___**Category I** – Total score = 22-27

X **Category II** – Total score = 19-21

___**Category III** – Total score = 16-18

___**Category IV** – Total score = 9-15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
	Circle the appropriate ratings			
Site Potential	H (M) L	H (M) L	H M (L)	
Landscape Potential	H M (L)	H M (L)	(H) M L	
Value	(H) M L	H M (L)	H M (L)	TOTAL
Score Based on Ratings	7	4	5	16

Score for each function based on three ratings *(order of ratings is not important)*

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY *Circle the appropriate category*
Vernal Pools	II III
Alkali	I
Wetland of High Conservation Value	I
Bog and Calcareous Fens	I
Old Growth or Mature Forest – slow growing	I
Aspen Forest	I
Old Growth or Mature Forest – fast growing	II
Floodplain forest	II
None of the above	

Wetland name or number "A"

DEPRESSIONAL WETLANDS **Water Quality Functions** - Indicators that the site functions to improve water quality		Points (only 1 score per box)
D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland: Wetland has no surface water outlet Wetland has an intermittently flowing outlet Wetland has a highly constricted permanently flowing outlet Wetland has a permanently flowing, unconstricted, surface outlet	points = 5 points = 3 points = 3 points = 1	5
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions of soils)*	YES = 3 NO = 0	0
D 1.3. Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes) Wetland has persistent, ungrazed, vegetation for > $^2/_3$ of area Wetland has persistent, ungrazed, vegetation from $^1/_3$ to $^2/_3$ of area Wetland has persistent, ungrazed vegetation from $^1/_{10}$ to < $^1/_3$ of area Wetland has persistent, ungrazed vegetation < $^1/_{10}$ of area	points = 5 points = 3 points = 1 points = 0	5
D 1.4. Characteristics of seasonal ponding or inundation: *This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.* Area seasonally ponded is > ½ total area of wetland Area seasonally ponded is ¼ - ½ total area of wetland Area seasonally ponded is < ¼ total area of wetland	points = 3 points = 1 points = 0	3
Total for D 1	Add the points in the boxes above	13

Rating of Site Potential If score is: X **12- 16 = H** ___**6- 11 = M** ___ **0- 5 = L** *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1- D 2.3? Source_____	Yes = 1 No = 0	0
Total for D 2	Add the points in the boxes above	0

Rating of Landscape Potential If score is:___**3 or 4 = H** ___**1 or 2 = M** X **0 = L** *Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list?	Yes = 1 No = 0	
D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]?	Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality *(answer YES if there is a TMDL for the drainage or basin in which the wetland is found)*?	Yes = 2 No = 0	2
Total for D 3	Add the points in the boxes above	

Rating of Value If score is: X **2-4 = H** ___**1 = M** ___**0 = L** *Record the rating on the first page*

Wetland name or number "A"

DEPRESSIONAL WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and erosion.

Points (only 1 score per box)

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland:

Wetland has no surface water outlet	points = 8	8
Wetland has an intermittently flowing outlet	points = 4	
Wetland has a highly constricted permanently flowing outlet	points = 4	
Wetland has a permanently flowing unconstricted surface outlet	points = 0	

(If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")

D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).*

Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding	points = 8	
Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding	points = 6	
The wetland is a headwater wetland	points = 4	2
Seasonal ponding: 1 ft - < 2 ft	points = 4	
Seasonal ponding: 6 in - < 1 ft	points = 2	
Seasonal ponding: < 6 in or wetland has only saturated soils	points = 0	

Total for D 4	Add the points in the boxes above	10

Rating of Site Potential If score is: ___ **12-16 = H** X **6-11 = M** ___ **0-5 = L** *Record the rating on the first page*

D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?

D 5.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 5.2. Is > 10% of the area within 150 ft of the wetland in a land use that generates runoff?	Yes = 1 No = 0	0
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?	Yes = 1 No = 0	0
Total for D 5	Add the points in the boxes above	0

Rating of Landscape Potential If score is: ___ **3 = H** ___ **1 or 2 = M** X **0 = L** *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?

D 6.1. The wetland is in a landscape that has flooding problems.

Choose the description that best matches conditions around the wetland being rated. *Do not add points. Choose the highest score if more than one condition is met.*

The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND

Flooding occurs in sub-basin that is immediately down-gradient of wetland	points = 2	0
Surface flooding problems are in a sub-basin farther down-gradient	points = 1	

The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood.

Explain why _____	points = 0	
There are no problems with flooding downstream of the wetland	points = 0	

D 6.2. Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan?	Yes = 2 No = 0	0
Total for D 6	Add the points in the boxes above	0

Rating of Value If score is: ___ **2-4 = H** ___ **1 = M** X **0 = L** *Record the rating on the first page*

Wetland name or number A

These questions apply to wetlands of all HGM classes. **HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat	(only 1 score per box)
H 1.0. Does the wetland have the potential to provide habitat for many species?	
H 1.1. Structure of the plant community: *Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is >= ¼ ac or >= 10% of the wetland if wetland is < 2.5 ac.* X Aquatic bed X Emergent plants 0-12 in (0-30 cm) high are the highest layer and have > 30% cover X Emergent plants >12-40 in (>30-100 cm) high are the highest layer with >30% cover X Emergent plants > 40 in (> 100 cm) high are the highest layer with >30% cover ___Scrub-shrub (areas where shrubs have >30% cover) ___Forested (areas where trees have >30% cover) 4 or more checks: points = 3 3 checks: points = 2 2 checks: points = 1 1 check: points = 0	1
H 1.2. Is one of the vegetation types Aquatic Bed? Yes = 1 No = 0	
H 1.3. Surface water H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least ¼ ac **OR** 10% of its area during the March to early June **OR** in August to the end of September? *Answer YES for Lake Fringe wetlands.* Yes = 3 points & go to H 1.4 No = go to H 1.3.2 H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least ¼ ac or 10% of its area? *Answer yes only if H 1.3.1 is No.* Yes = 3 No = 0	0
H 1.4. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft^2. D*ifferent patches of the same species can be combined to meet the size threshold. You do not have to name the species.* *Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)* # of species ____ Scoring: > 9 species: points = 2 4-9 species: points = 1 < 4 species: points = 0	0
H 1.5. Interspersion of habitats Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none. *Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.* **None** = 0 points **Low** = 1 point **Moderate** = 2 points All three diagrams in this row are **High** = 3 points Riparian braided channels with 2 classes	Figure__ 1

Wetland name or number A

H 1.6. Special habitat features *Check the habitat features that are present in the wetland. The number of checks is the number of points.* ____Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream. ____Cattails or bulrushes are present within the wetland. ____Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge. ____Emergent or shrub vegetation in areas that are permanently inundated/ponded. ____Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity ____ Invasive species cover less than 20% in each stratum of vegetation *(canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)*	0
Total for H 1 — Add the points in the boxes above	2

Rating of Site Potential If score is:___**15-18 = H** ___**7-14 = M** ___**0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support habitat functions of the site?	
H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is: *Calculate:* % undisturbed habitat _____ + [(% moderate and low intensity land uses)/2] _____ = _____% > 1/3 (33.3%) of 1 km Polygon — points = 3 20-33% of 1km Polygon — points = 2 10-19% of 1km Polygon — points = 1 <10% of 1km Polygon — points = 0	3
H 2.2. Undisturbed habitat in 1 km Polygon around wetland. *Calculate:* % undisturbed habitat _____ + [(% moderate and low intensity land uses)/2] _____ = _____% Undisturbed habitat > 50% of Polygon — points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches — points = 2 Undisturbed habitat 10 - 50% and > 3 patches — points = 1 Undisturbed habitat < 10% of Polygon — points = 0	2
H 2.3. Land use intensity in 1 km Polygon: > 50% of Polygon is high intensity land use — points = (-2) Does not meet criterion above — points = 0	0
H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. *Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs* — Yes = 3, No = 0	0
Total for H 2 — Add the points in the boxes above	5

Rating of Landscape Potential If score is:___**4-9 = H** ___**1-3 = M** ___**< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose the highest score that applies to the wetland being rated* Site meets ANY of the following criteria: — points = 2 — It has 3 or more priority habitats within 100 m (see Appendix B) — It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists) — It is mapped as a location for an individual WDFW species — It is a Wetland of High Conservation Value as determined by the Department of Natural Resources — It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats within 100 m (see Appendix B) — points = 1 Site does not meet any of the criteria above — points = 0	0

Rating of Value If score is:___**2 = H** ___**1 = M** ___**0 = L** *Record the rating on the first page*

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: A 21st City/County: Spokane Sampling Date: 6/15/22

Applicant/Owner: _____ State: Washington Sampling Point: Wetland

Investigator(s): Bill Towey (TES) Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _

Subregion (LRR): B – Columbia/Snake River Plateau Lat: _____ Long: _____ Datum: NAVD 88

Soil Map Unit Name: Cocolalla-Hardesty Complex NWI classification: PEMIC

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? NO Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? NO (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 X	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No _____
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks: The slope wetland has flowing water.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
	_____ = Total Cover		
Herb Stratum (Plot size:)			
1. Phalaris arundinacea	60%	Y	FACW
2. Equisetum hyemale	20%	Y	FACW
3. Solidago spp.	20%	Y	FACU
4.			
5.			
6.			
7.			
8.			
9.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species 80	x 2 =	160
FAC species	x 3 =	
FACU species 20	x 4 =	80
UPL species	x 5 =	
Column Totals: 100 (A)		240 (B)

Prevalence Index = B/A = 2.4

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

X Prevalence Index is ≤ 3.0[1]

__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

"A"

SOIL Cocollalla - Hardesty Complex

Sampling Point: DP #1 (Wetland)

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-21"	10YR 2/1						Silt loam	saturated
21-36"							Silt loam	mottling.

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

* several soil pits dug to identify transition from wetland/upland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- X Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): ___

Wetland Hydrology Present? Yes X No ___

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: "A" 21st City/County: Spokane Sampling Date: 6/15/22

Applicant/Owner: _____ State: Washington Sampling Point: Upland

Investigator(s): Bill Towey (TES) Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _

Subregion (LRR): B – Columbia/Snake River Plateau Lat: _____ Long: _____ Datum: NAVD 88

Soil Map Unit Name: Coccolalla – Hardesty Complex NWI classification: /

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? NO Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? NO (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 X	**Is the Sampled Area within a Wetland?** Yes _____ No _____
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks: The slope wetland has flowing water.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
	_____ = Total Cover		
Herb Stratum (Plot size:)			
1. Solidago spp.	20%	Y	FACU
2. Achillea millefolium	25%	Y	FACU
3. Upland grasses	55%	Y	FACU
4.			
5.			
6.			
7.			
8.			
9.			
	100% = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species _____	x 1 =	_____
FACW species _____	x 2 =	_____
FAC species _____	x 3 =	_____
FACU species 100	x 4 =	400
UPL species _____	x 5 =	_____
Column Totals: 100 (A)		400 (B)

Prevalence Index = B/A = 4.0

Hydrophytic Vegetation Indicators:

_ Dominance Test is >50%

_ Prevalence Index is ≤ 3.0[1]

__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

"A" upland

SOIL Cocolalla-Hardesty Complex

Sampling Point: DP #1 (Wetland)

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-36	10YR 2/1	+						Dry - no mottling

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): _____

Water Table Present? Yes ____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): _____

Wetland Hydrology Present? Yes ____ No X

Remarks:

Wetland name or number "B"

RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): "B" - 21st Project Date of site visit: 6/15/22

Rated by William T. Towey Trained by Ecology? X Yes ___ No Date of training 04/16/15

HGM Class used for rating Depressional Wetland has multiple HGM classes? ___ Y X N

NOTE: Form is not complete without the figures requested (*figures can be combined*).

Source of base aerial photo/map Google Earth, NWI Map, Soil Map, PHS info HGM map, 1Km map.

OVERALL WETLAND CATEGORY III (based on functions___ or special characteristics___)

1. Category of wetland based on FUNCTIONS

___**Category I** – Total score = 22-27

___**Category II** – Total score = 19-21

X **Category III** – Total score = 16-18

___**Category IV** – Total score = 9-15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
	Circle the appropriate ratings			
Site Potential	(H) M L	H (M) L	H M (L)	
Landscape Potential	H M (L)	H M (L)	(H) M L	
Value	(H) M L	H M (L)	(H) M (L)	**TOTAL**
Score Based on Ratings	7	4	5	16

Score for each function based on three ratings *(order of ratings is not important)*

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY *Circle the appropriate category*
Vernal Pools	II III
Alkali	I
Wetland of High Conservation Value	I
Bog and Calcareous Fens	I
Old Growth or Mature Forest – slow growing	I
Aspen Forest	I
Old Growth or Mature Forest – fast growing	II
Floodplain forest	II
None of the above	

Wetland name or number B

DEPRESSIONAL WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

	Points (only 1 score per box)
D 1.0. Does the site have the potential to improve water quality?	
D 1.1. Characteristics of surface water outflows from the wetland: Wetland has no surface water outlet — points = 5 Wetland has an intermittently flowing outlet — points = 3 Wetland has a highly constricted permanently flowing outlet — points = 3 Wetland has a permanently flowing, unconstricted, surface outlet — points = 1	5
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions of soils)* YES = 3 NO = 0	0
D 1.3. Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes) Wetland has persistent, ungrazed, vegetation for > 2/3 of area — points = 5 Wetland has persistent, ungrazed, vegetation from 1/3 to 2/3 of area — points = 3 Wetland has persistent, ungrazed vegetation from 1/10 to < 1/3 of area — points = 1 Wetland has persistent, ungrazed vegetation < 1/10 of area — points = 0	5
D 1.4. Characteristics of seasonal ponding or inundation: *This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.* Area seasonally ponded is > ½ total area of wetland — points = 3 Area seasonally ponded is ¼ - ½ total area of wetland — points = 1 Area seasonally ponded is < ¼ total area of wetland — points = 0	3
Total for D 1 — Add the points in the boxes above	13

Rating of Site Potential If score is: X **12- 16 = H** ___ **6- 11 = M** ___ **0- 5 = L** *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1- D 2.3? Source_____ Yes = 1 No = 0	0
Total for D 2 — Add the points in the boxes above	0

Rating of Landscape Potential If score is: ___ **3 or 4 = H** ___ **1 or 2 = M** X **0 = L** *Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list? Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]? Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality *(answer YES if there is a TMDL for the drainage or basin in which the wetland is found)*? Yes = 2 No = 0	2
Total for D 3 — Add the points in the boxes above	3

Rating of Value If score is: X **2-4 = H** ___ **1 = M** ___ **0 = L** *Record the rating on the first page*

Wetland name or number B

DEPRESSIONAL WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and erosion.

Points (only 1 score per box)

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland:

Wetland has no surface water outlet	points = 8	8
Wetland has an intermittently flowing outlet	points = 4	
Wetland has a highly constricted permanently flowing outlet	points = 4	
Wetland has a permanently flowing unconstricted surface outlet	points = 0	

(If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")

D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).*

Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding	points = 8	
Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding	points = 6	2
The wetland is a headwater wetland	points = 4	
Seasonal ponding: 1 ft - < 2 ft	points = 4	
Seasonal ponding: 6 in - < 1 ft	points = 2	
Seasonal ponding: < 6 in or wetland has only saturated soils	points = 0	
Total for D 4	Add the points in the boxes above	10

Rating of Site Potential If score is: ___**12-16 = H** X **6-11 = M** ___**0-5 = L** *Record the rating on the first page*

D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?

D 5.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 5.2. Is > 10% of the area within 150 ft of the wetland in a land use that generates runoff?	Yes = 1 No = 0	0
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?	Yes = 1 No = 0	0
Total for D 5	Add the points in the boxes above	0

Rating of Landscape Potential If score is: ___**3 = H** ___**1 or 2 = M** X **0 = L** *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?

D 6.1. The wetland is in a landscape that has flooding problems.

Choose the description that best matches conditions around the wetland being rated. *Do not add points. Choose the highest score if more than one condition is met.*

The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND

Flooding occurs in sub-basin that is immediately down-gradient of wetland	points = 2	
Surface flooding problems are in a sub-basin farther down-gradient	points = 1	

The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. 0

Explain why _____ points = 0

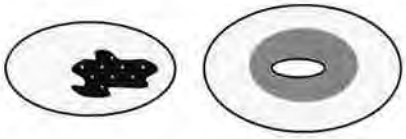
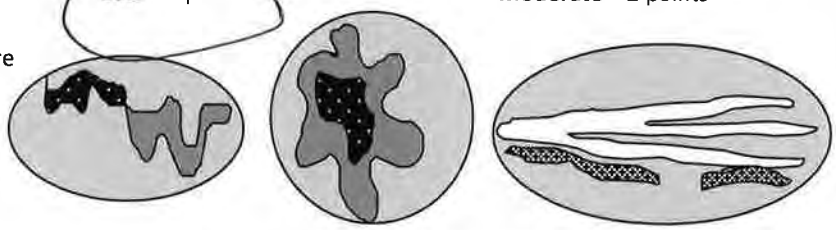
There are no problems with flooding downstream of the wetland points = 0

D 6.2. Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0 0

Total for D 6 Add the points in the boxes above 0

Rating of Value If score is: ___**2-4 = H** ___**1 = M** X **0 = L** *Record the rating on the first page*

Wetland name or number B

These questions apply to wetlands of all HGM classes. **HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat	(only 1 score per box)
H 1.0. Does the wetland have the potential to provide habitat for many species?	
H 1.1. Structure of the plant community: *Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is >= ¼ ac or >= 10% of the wetland if wetland is < 2.5 ac.* X Aquatic bed X Emergent plants 0-12 in (0-30 cm) high are the highest layer and have > 30% cover ___ Emergent plants >12-40 in (>30-100 cm) high are the highest layer with >30% cover X Emergent plants > 40 in (> 100 cm) high are the highest layer with >30% cover ___ Scrub-shrub (areas where shrubs have >30% cover) ___ Forested (areas where trees have >30% cover) 4 or more checks: points = 3 3 checks: points = 2 2 checks: points = 1 1 check: points = 0	1
H 1.2. Is one of the vegetation types Aquatic Bed? Yes = 1 No = 0	0
H 1.3. Surface water H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least ¼ ac **OR** 10% of its area during the March to early June **OR** in August to the end of September? *Answer YES for Lake Fringe wetlands.* Yes = 3 points & go to H 1.4 No = go to H 1.3.2 H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least ¼ ac or 10% of its area? *Answer yes only if H 1.3.1 is No.* Yes = 3 No = 0	0
H 1.4. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft^2. D*ifferent patches of the same species can be combined to meet the size threshold. You do not have to name the species.* *Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)* # of species ____ Scoring: > 9 species: points = 2 4-9 species: points = 1 < 4 species: points = 0	0
H 1.5. Interspersion of habitats Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none. *Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.*  **None** = 0 points  **Low** = 1 point  **Moderate** = 2 points All three diagrams in this row are **High** = 3 points  Riparian braided channels with 2 classes	Figure 1

Wetland name or number "B"

H 1.6. Special habitat features *Check the habitat features that are present in the wetland. The number of checks is the number of points.* ____Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream. ____Cattails or bulrushes are present within the wetland. ____Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge. ____Emergent or shrub vegetation in areas that are permanently inundated/ponded. ____Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity ____ Invasive species cover less than 20% in each stratum of vegetation *(canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)*	0
Total for H 1 — Add the points in the boxes above	2

Rating of Site Potential If score is: ___**15-18 = H** ___**7-14 = M** X **0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support habitat functions of the site?	
H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is: *Calculate:* % undisturbed habitat _____ + [(% moderate and low intensity land uses)/2] ____ = _____% > 1/3 (33.3%) of 1 km Polygon — points = 3 20-33% of 1km Polygon — points = 2 10-19% of 1km Polygon — points = 1 <10% of 1km Polygon — points = 0	3
H 2.2. Undisturbed habitat in 1 km Polygon around wetland. *Calculate:* % undisturbed habitat _____ + [(% moderate and low intensity land uses)/2] ____ = _____% Undisturbed habitat > 50% of Polygon — points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches — points = 2 Undisturbed habitat 10 - 50% and > 3 patches — points = 1 Undisturbed habitat < 10% of Polygon — points = 0	2
H 2.3. Land use intensity in 1 km Polygon: > 50% of Polygon is high intensity land use — points = (2) Does not meet criterion above — points = 0	0
H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. *Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs* — Yes = 3 No = 0	0
Total for H 2 — Add the points in the boxes above	5

Rating of Landscape Potential If score is: X **4-9 = H** ___**1-3 = M** ___**< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose the highest score that applies to the wetland being rated* Site meets ANY of the following criteria: — points = 2 — It has 3 or more priority habitats within 100 m (see Appendix B) — It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists) — It is mapped as a location for an individual WDFW species — It is a Wetland of High Conservation Value as determined by the Department of Natural Resources — It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats within 100 m (see Appendix B) — points = 1 Site does not meet any of the criteria above — points = 0	0

Rating of Value If score is: ___**2 = H** ___**1 = M** X **0 = L** *Record the rating on the first page*

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 1st Project B-21 City/County: Spokane Sampling Date: 6/15/22

Applicant/Owner: _____ State: Washington Sampling Point: Wetland

Investigator(s): Bill Towey (TES) Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _

Subregion (LRR): B – Columbia/Snake River Plateau Lat: _____ Long: _____ Datum: NAVD 88

Soil Map Unit Name: Coeur d'Alene-Hardesty Complex NWI classification: PEMC*

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? No Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (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 X	No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks: The slope wetland has flowing water.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
	_____ = Total Cover		
Herb Stratum (Plot size:)			
1. Phalaris arundinacea	65%	Y	FACW
2. Equisetum hyemale	25%	Y	FACW
3. Solidago spp.	10%	N	FACW
4.			
5.			
6.			
7.			
8.			
9.			
	100% = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species 90	x 2 =	180
FAC species	x 3 =	
FACU species 10	x 4 =	40
UPL species	x 5 =	
Column Totals: 100 (A)		220 (B)

Prevalence Index = B/A = 2.2

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

X Prevalence Index is ≤ 3.0[1]

__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL Cocollalla-Hardesty Complex

Sampling Point: DP #1 (Wetland)

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-21	10YR 2/1						silt loam	saturated
21-36							silt loam	mottling

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- X Depleted Dark Surface (F7)
- X Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks: Several soil pits dug to identify wetland/upland transition

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- X Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 0"

Wetland Hydrology Present? Yes X No ___

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: "B_21" City/County: Spokane Sampling Date: 6/15/22

Applicant/Owner: State: Washington Sampling Point: Upland

Investigator(s): Bill Towey (TES) Section, Township, Range:

Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%):

Subregion (LRR): B – Columbia/Snake River Plateau Lat: Long: Datum: NAVD 88

Soil Map Unit Name: Coolulla-Hardesty Complex NWI classification:

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? No Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? No (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 X	**Is the Sampled Area within a Wetland?** Yes No X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes	No X	

Remarks: The slope wetland has flowing water.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
	= Total Cover		
Herb Stratum (Plot size:)			
1. Achillea millefolium	15%	N	FACU
2. Cynoglossum officinale	10%	N	FACU
3. Verbascum thapsus	20%	Y	FACU
4. Solidago spp.	55%	Y	FACU
5.			
6.			
7.			
8.			
9.			
	= Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum % Cover of Biotic Crust

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species 100	x 4 =	400
UPL species	x 5 =	
Column Totals: 100 (A)		400 (B)

Prevalence Index = B/A = 4.0

Hydrophytic Vegetation Indicators:

_ Dominance Test is >50%

_ Prevalence Index is ≤ 3.0[1]

__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No X

Remarks:

Cocdalla Hardesty Complex

SOIL

Upland

Sampling Point: DP #1 (Wetland)

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-36	10YR 2/1						silty loam	dry no mottling

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____

Water Table Present? Yes ____ No X Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): ____

Wetland Hydrology Present? Yes ____ No X

Remarks:

Wetland name or number "C" "1"

RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): "C" -21st Project Date of site visit: 6/15/22

Rated by William T. Towery Trained by Ecology? X Yes ___ No Date of training 04/16/15

HGM Class used for rating Depressional Wetland has multiple HGM classes? ___Y X N

NOTE: Form is not complete without the figures requested (*figures can be combined*).

Source of base aerial photo/map Google Earth, NWI Map, Soil Map, PHS info, HGM Map, 1 Km - Map

OVERALL WETLAND CATEGORY III (based on functions___ or special characteristics___)

1. Category of wetland based on FUNCTIONS

___**Category I** – Total score = 22-27

X **Category II** – Total score = 19-21

___**Category III** – Total score = 16-18

___**Category IV** – Total score = 9-15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
	Circle the appropriate ratings			
Site Potential	(H) M L	H (M) L	H M (L)	
Landscape Potential	H M (L)	H M (L)	(H) M L	
Value	(H) M L	H M (L)	H M (L)	TOTAL
Score Based on Ratings	7	4	5	16

Score for each function based on three ratings *(order of ratings is not important)*

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY *Circle the appropriate category*
Vernal Pools	II III
Alkali	I
Wetland of High Conservation Value	I
Bog and Calcareous Fens	I
Old Growth or Mature Forest – slow growing	I
Aspen Forest	I
Old Growth or Mature Forest – fast growing	II
Floodplain forest	II
None of the above	

Wetland name or number "C"

DEPRESSIONAL WETLANDS **Water Quality Functions** - Indicators that the site functions to improve water quality		Points (only 1 score per box)
D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland: Wetland has no surface water outlet Wetland has an intermittently flowing outlet Wetland has a highly constricted permanently flowing outlet Wetland has a permanently flowing, unconstricted, surface outlet	points = 5 ~~points = 3~~ points = 3 points = 1	5
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions of soils)*	YES = 3 NO = 0	0
D 1.3. Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes) Wetland has persistent, ungrazed, vegetation for > $^2/_3$ of area Wetland has persistent, ungrazed, vegetation from $^1/_3$ to $^2/_3$ of area Wetland has persistent, ungrazed vegetation from $^1/_{10}$ to < $^1/_3$ of area Wetland has persistent, ungrazed vegetation < $^1/_{10}$ of area	points = 5 ~~points = 3~~ points = 1 points = 0	5
D 1.4. Characteristics of seasonal ponding or inundation: *This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.* Area seasonally ponded is > ½ total area of wetland Area seasonally ponded is ¼ - ½ total area of wetland Area seasonally ponded is < ¼ total area of wetland	points = 3 ~~points = 1~~ points = 0	3
Total for D 1	Add the points in the boxes above	13

Rating of Site Potential If score is: X **12- 16 = H** ___ **6- 11 = M** ___ **0- 5 = L** *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland? City hook up	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1- D 2.3? Source_____	Yes = 1 No = 0	0
Total for D 2	Add the points in the boxes above	0

Rating of Landscape Potential If score is: ___ **3 or 4 = H** ___ **1 or 2 = M** X **0 = L** *Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list?	Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [~~303(d) list~~, eutrophic lakes, problems with nuisance and toxic algae]?	Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality *(~~answer~~ YES if there is a TMDL for the drainage or basin in which the wetland is found)*?	Yes = 2 No = 0	2
Total for D 3	Add the points in the boxes above	3

Rating of Value If score is: X **2-4 = H** ___ **1 = M** ___ **0 = L** *Record the rating on the first page*

Wetland name or number C

DEPRESSIONAL WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and erosion.

	Points (only 1 score per box)
D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. Characteristics of surface water outflows from the wetland:	
Wetland has no surface water outlet — points = 8	8
Wetland has an intermittently flowing outlet — points = 4	
Wetland has a highly constricted permanently flowing outlet — points = 4	
Wetland has a permanently flowing unconstricted surface outlet — points = 0	
(If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")	
D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).*	
Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding — points = 8	2
Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding — points = 6	
The wetland is a headwater wetland — points = 4	
Seasonal ponding: 1 ft - < 2 ft — points = 4	
Seasonal ponding: 6 in - < 1 ft — points = 2	
Seasonal ponding: < 6 in or wetland has only saturated soils — points = 0	
Total for D 4 — Add the points in the boxes above	10

Rating of Site Potential If score is: ___**12-16 = H** X **6-11 = M** ___**0-5 = L** *Record the rating on the first page*

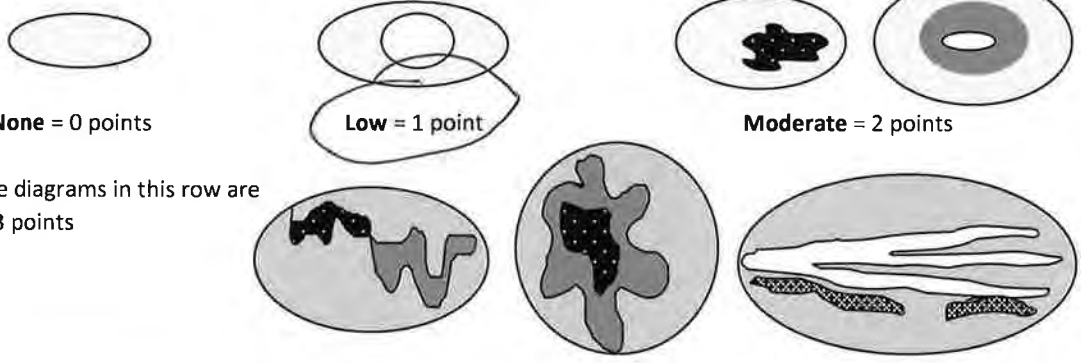
D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	
D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	0
D 5.2. Is > 10% of the area within 150 ft of the wetland in a land use that generates runoff? Yes = 1 No = 0	0
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses? Yes = 1 No = 0	0
Total for D 5 — Add the points in the boxes above	0

Rating of Landscape Potential If score is: ___**3 = H** ___**1 or 2 = M** X **0 = L** *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?	
D 6.1. The wetland is in a landscape that has flooding problems.	
Choose the description that best matches conditions around the wetland being rated. *Do not add points. Choose the highest score if more than one condition is met.*	
The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND	
Flooding occurs in sub-basin that is immediately down-gradient of wetland — points = 2	0
Surface flooding problems are in a sub-basin farther down-gradient — points = 1	
The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood.	
Explain why _____ — points = 0	
There are no problems with flooding downstream of the wetland — points = 0	
D 6.2. Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0	0
Total for D 6 — Add the points in the boxes above	0

Rating of Value If score is: ___**2-4 = H** ___**1 = M** X **0 = L** *Record the rating on the first page*

Wetland name or number C

These questions apply to wetlands of all HGM classes. **HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat	(only 1 score per box)
H 1.0. Does the wetland have the potential to provide habitat for many species?	
H 1.1. Structure of the plant community: *Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is >= ¼ ac or >= 10% of the wetland if wetland is < 2.5 ac.* ___Aquatic bed X Emergent plants 0-12 in (0-30 cm) high are the highest layer and have > 30% cover ___Emergent plants >12-40 in (>30-100 cm) high are the highest layer with >30% cover X Emergent plants > 40 in (> 100 cm) high are the highest layer with >30% cover ___Scrub-shrub (areas where shrubs have >30% cover) ___Forested (areas where trees have >30% cover) 4 or more checks: points = 3 ~~3 checks: points = 2~~ 2 checks: points = 1 ~~1 check: points = 0~~	1
H 1.2. Is one of the vegetation types Aquatic Bed? Yes = 1 No = 0	0
H 1.3. Surface water H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least ¼ ac **OR** 10% of its area during the March to early June **OR** in August to the end of September? *Answer YES for Lake Fringe wetlands.* Yes = 3 points & go to H 1.4 No = go to H 1.3.2 H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least ¼ ac or 10% of its area? *Answer yes only if H 1.3.1 is No.* Yes = 3 No = 0	0
H 1.4. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft^2. D*ifferent patches of the same species can be combined to meet the size threshold. You do not have to name the species.* *Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)* # of species ____ Scoring: > 9 species: points = 2 ~~4-9 species: points = 1~~ < 4 species: points = 0	0
H 1.5. Interspersion of habitats Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none. *Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.*  **None** = 0 points **Low** = 1 point **Moderate** = 2 points All three diagrams in this row are **High** = 3 points Riparian braided channels with 2 classes	Figure__ 1

Wetland name or number C

H 1.6. Special habitat features *Check the habitat features that are present in the wetland. The number of checks is the number of points.* ____Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream. ____Cattails or bulrushes are present within the wetland. ____Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge. ____Emergent or shrub vegetation in areas that are permanently inundated/ponded. ____Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity ____ Invasive species cover less than 20% in each stratum of vegetation *(canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)*	0
Total for H 1 — Add the points in the boxes above	2

Rating of Site Potential If score is: ___**15-18 = H** ___**7-14 = M** X **0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support habitat functions of the site?	
H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is: *Calculate:* % undisturbed habitat _____ + [(% moderate and low intensity land uses)/2] _____ = _____% > 1/3 (33.3%) of 1 km Polygon — 37% — points = 3 20-33% of 1km Polygon — points = 2 10-19% of 1km Polygon — points = 1 <10% of 1km Polygon — points = 0	3
H 2.2. Undisturbed habitat in 1 km Polygon around wetland. *Calculate:* % undisturbed habitat _____ + [(% moderate and low intensity land uses)/2] _____ = _____% Undisturbed habitat > 50% of Polygon — 47% — points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches — points = 2 Undisturbed habitat 10 - 50% and > 3 patches — points = 1 Undisturbed habitat < 10% of Polygon — points = 0	2
H 2.3. Land use intensity in 1 km Polygon: > 50% of Polygon is high intensity land use — points = (-2) Does not meet criterion above — points = 0	0
H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. *Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs* — Yes = 3 No = 0	0
Total for H 2 — Add the points in the boxes above	5

Rating of Landscape Potential If score is: X **4-9 = H** ___**1-3 = M** ___**< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose the highest score that applies to the wetland being rated* Site meets ANY of the following criteria: — points = 2 — It has 3 or more priority habitats within 100 m (see Appendix B) — It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists) — It is mapped as a location for an individual WDFW species — It is a Wetland of High Conservation Value as determined by the Department of Natural Resources — It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats within 100 m (see Appendix B) — points = 1 Site does not meet any of the criteria above — points = 0	0

Rating of Value If score is: ___**2 = H** ___**1 = M** X **0 = L** *Record the rating on the first page*

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: "C" 21 ST City/County: Spokane Sampling Date: 6/15/22

Applicant/Owner: _____ State: Washington Sampling Point: "C" SP Wetland

Investigator(s): Bill Towey (TES) Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _

Subregion (LRR): B – Columbia/Snake River Plateau Lat: _____ Long: _____ Datum: NAVD 88

Soil Map Unit Name: Cocolalla-Hardesty Complex NWI classification: PEMIc

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? NO Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? NO (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 X	No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks: ~~The slope wetland has flowing water.~~ all three wetland criteria met

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
	_____ = Total Cover		
Herb Stratum (Plot size:)			
1. Phalaris arundinacea	65%	Y	FACW
2. Equisetum hyemale	20%	Y	FACW
3. Solidago spp.	15%	N	FACU
4.			
5.			
6.			
7.			
8.			
9.			
	100% = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species	85	x 2 =	170
FAC species		x 3 =	
FACU species	15	x 4 =	60
UPL species		x 5 =	
Column Totals:	100 (A)		230 (B)

Prevalence Index = B/A = 2.3

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

X Prevalence Index is ≤ 3.0[1]

__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? X Yes _____ No _____

Remarks:

" C "

SOIL Cocolalla - Hardesty Complex

Sampling Point: DP #1 (Wetland)

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 2/1						silt loam	mottling/Saturated
24-36"	10YR/2/1(wet)						"	mottling
	2.5Y 6/1(dry)							

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks: Poorly drained. Several soil pits dug to determine upland/wetland boundary.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 12"

Wetland Hydrology Present? Yes X No ___

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: C-21 11th st City/County: Spokane Sampling Date: 6/15/22

Applicant/Owner: _____ State: Washington Sampling Point: Upland

Investigator(s): Bill Towey (TES) Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _

Subregion (LRR): B – Columbia/Snake River Plateau Lat: _____ Long: _____ Datum: NAVD 88

Soil Map Unit Name: Cocallalla-Haudisty Complex NWI classification: _____

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? No Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (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 X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks: The slope wetland has flowing water

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
	_____ = Total Cover		
Herb Stratum (Plot size:)			
1. Verbascum thapsus	5%	N	FACU
2. Rosa spp.	20%	Y	FACU
3. Cynoglossum officinale	5%	N	FACU
4. Achillea millefolium	10%	N	FACU
5.			
6. Cirsium arvense	10%	N	FACU
7. Solidago spp.	50%	Y	FACU
8.			
9.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species _____	x 1 =	_____
FACW species _____	x 2 =	_____
FAC species _____	x 3 =	_____
FACU species 100	x 4 =	400
UPL species _____	x 5 =	_____
Column Totals: 100 (A)		400 (B)

Prevalence Index = B/A = 4.0

Hydrophytic Vegetation Indicators:

_ Dominance Test is >50%

_ Prevalence Index is ≤ 3.0[1]

__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

upland

SOIL Cocolalla - Hardesty Complex

Sampling Point: DP #1 (~~Wetland~~)

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12"	10YR 2/1						silt loam	no mottling
12-36	10YR 2/1						silt loam	dry no mottling

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

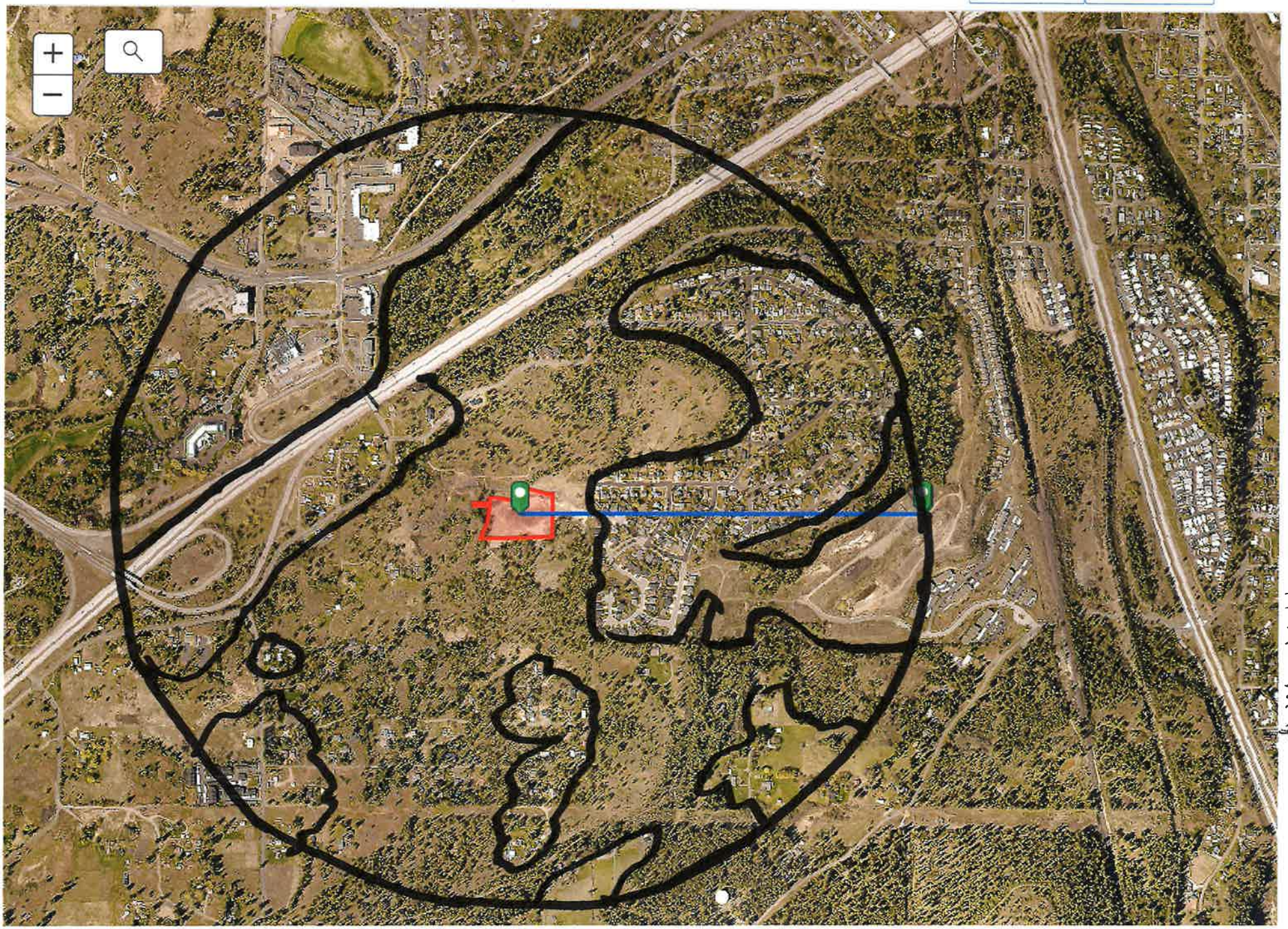
Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes ___ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): _____

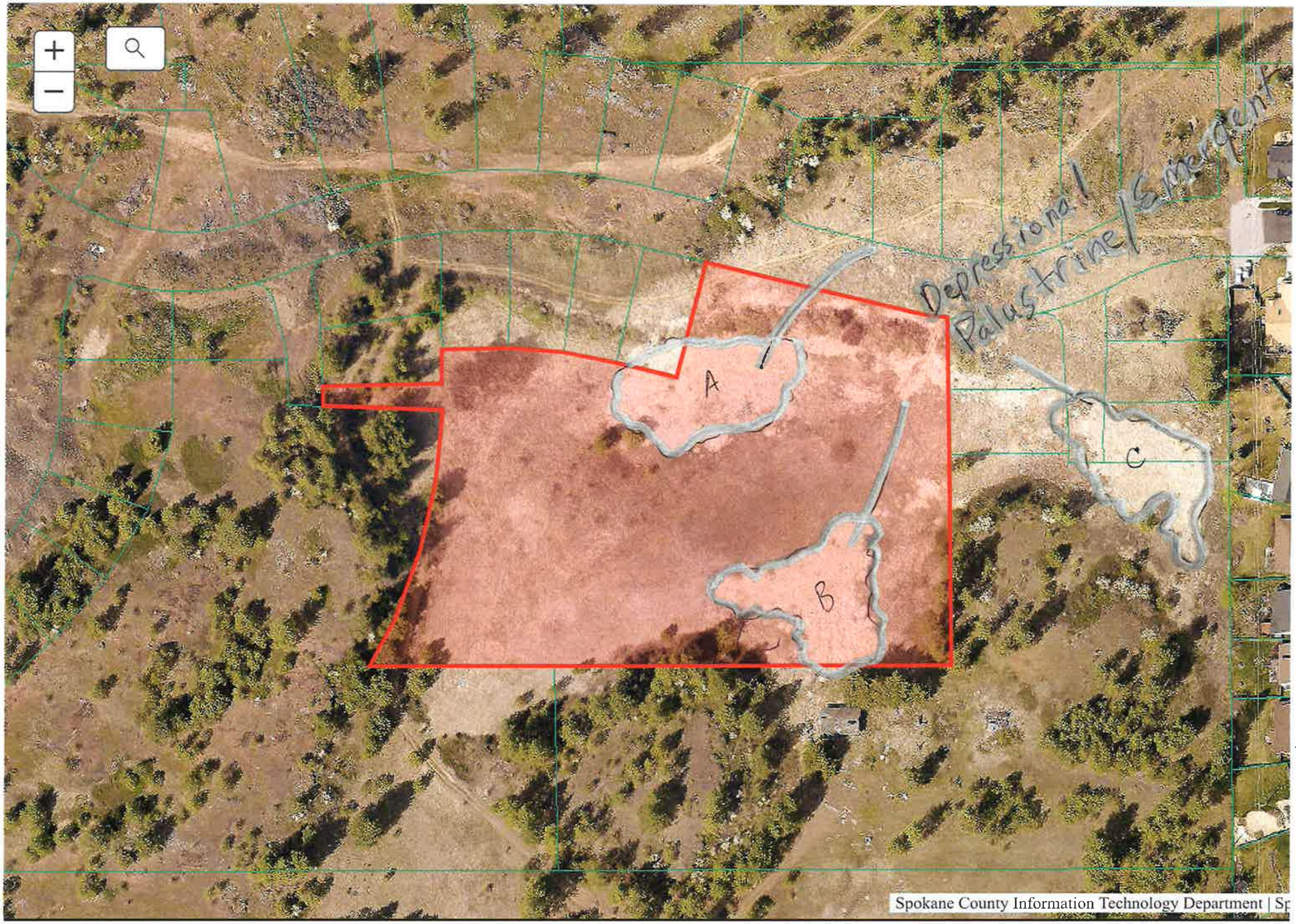
Wetland Hydrology Present? Yes ___ No X

Remarks:



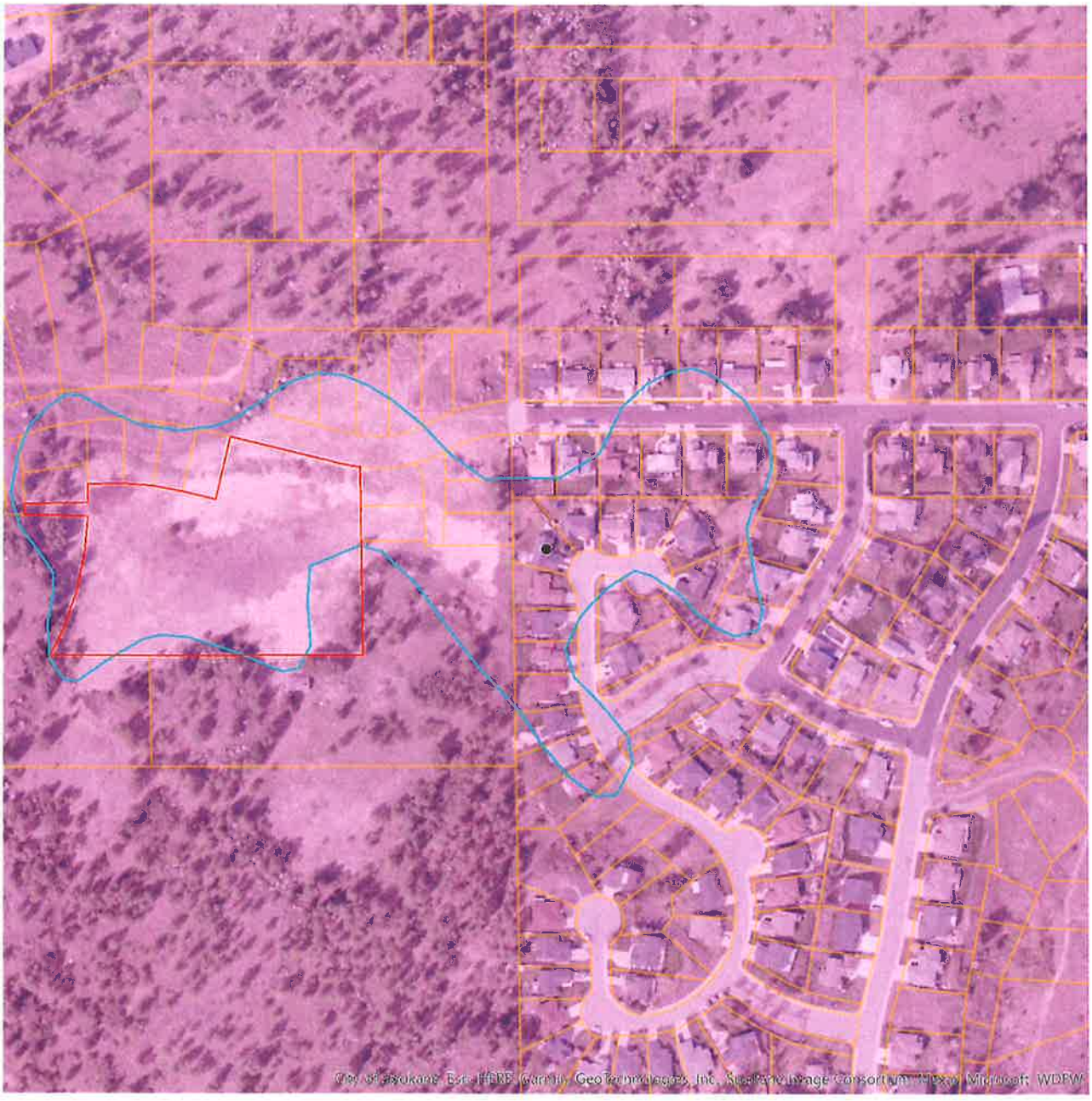
1 Km – Map

Measure More Info



HGM Class/Cowardin

Priority Habitats and Species on the Web



Report Date: 03/15/2022, Parcel ID: 25263.2907

PHS Species/Habitats Overview:

Occurence Name	Federal Status	State Status	Sensitive Location
Mule deer	N/A	N/A	No
Freshwater Emergent Wetland	N/A	N/A	No
Big brown bat	N/A	N/A	Yes
Townsend's Big-eared Bat	N/A	Candidate	Yes

PHS Species/Habitats Details:

Mule deer	
Scientific Name	*Odocoileus hemionus hemionus*
Priority Area	Regular Concentration
Site Name	LINCOLN-SPOKANE MULE DEER HERD
Accuracy	1/4 mile (Quarter Section)
Notes	REGULAR CONCENTRATION IN WINTER TIME IN AREAS OF SHRUB. DEER ARE CONCENTRATEDON THE EDGE OF AG IN SHRUBS AND SPARCER TREED HABITAT. SOUTHERN EDGE OF LAKEROOSEVELT AND LAKE SPOKANE. MORE COMMONLY UTILIZING WINTER WHEAT AREAS.
Source Record	920012
Source Dataset	PHSREGION
Source Name	ATAMIAN, MIKE
Source Entity	WA Dept. of Fish and Wildlife
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS LISTED OCCURRENCE
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=00612
Geometry Type	Polygons

Freshwater Emergent Wetland	
Priority Area	Aquatic Habitat
Site Name	N/A
Accuracy	NA
Notes	Wetland System: Freshwater Emergent Wetland - NWI Code: PEM1C
Source Dataset	NWIWetlands
Source Name	Not Given
Source Entity	US Fish and Wildlife Service
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
ManagementRecommendations	http://www.ecy.wa.gov/programs/sea/wetlands/bas/index.html
Geometry Type	Polygons

Big brown bat	
Scientific Name	*Eptesicus fuscus*
Notes	This polygon mask represents one or more records of the above species or habitat occurrence. Contact PHS Data Release (360-902-2543) for obtaining information about masked sensitive species and habitats.
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	Y
SGCN	N
Display Resolution	TOWNSHIP
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=00605

Townsend's Big-eared Bat	
Scientific Name	*Corynorhinus townsendii*
Notes	This polygon mask represents one or more records of the above species or habitat occurrence. Contact PHS Data Release (360-902-2543) for obtaining information about masked sensitive species and habitats.
Federal Status	N/A
State Status	Candidate
PHS Listing Status	PHS Listed Occurrence
Sensitive	Y
SGCN	Y
Display Resolution	TOWNSHIP
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=00027

Attachment 3

Annotated Wetland Ratings with Land Use Figure

Attachment 3

Wetland name or number "A"

RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): "A" - 21st Project Date of site visit: 6/15/22

Rated by William T. Towey Trained by Ecology? X Yes ___ No Date of training 04/16/15

HGM Class used for rating Depressional Wetland has multiple HGM classes? ___ Y X N

NOTE: Form is not complete without the figures requested (*figures can be combined*).

Source of base aerial photo/map Google Earth, NWI Map, Soil Map, PHS info HGM Map - 1 Km - Map

OVERALL WETLAND CATEGORY III (based on functions X or special characteristics ___)

IV

1. Category of wetland based on FUNCTIONS

___ **Category I** – Total score = 22-27

___ X **Category II** – Total score = 19-21

___ **Category III** – Total score = 16-18

X **Category IV** – Total score = 9-15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
	Circle the appropriate ratings			
Site Potential	H (M) L	H (M) L	H M (L)	
Landscape Potential	H M (L)	H M (L)	(H) M L	
Value	(H) M L	H M (L)	H M (L)	TOTAL
Score Based on Ratings	7	4	5 4	16 15

Score for each function based on three ratings *(order of ratings is not important)*

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY *Circle the appropriate category*
Vernal Pools	II III
Alkali	I
Wetland of High Conservation Value	I
Bog and Calcareous Fens	I
Old Growth or Mature Forest – slow growing	I
Aspen Forest	I
Old Growth or Mature Forest – fast growing	II
Floodplain forest	II
None of the above	

Wetland name or number "A"

DEPRESSIONAL WETLANDS **Water Quality Functions** - Indicators that the site functions to improve water quality		Points (only 1 score per box)
D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland: Wetland has no surface water outlet Wetland has an intermittently flowing outlet Wetland has a highly constricted permanently flowing outlet Wetland has a permanently flowing, unconstricted, surface outlet	points = 5 points = 3 points = 3 points = 1	5
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions of soils)*	YES = 3 NO = 0	0
D 1.3. Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes) Wetland has persistent, ungrazed, vegetation for > $^2/_3$ of area Wetland has persistent, ungrazed, vegetation from $^1/_3$ to $^2/_3$ of area Wetland has persistent, ungrazed vegetation from $^1/_{10}$ to < $^1/_3$ of area Wetland has persistent, ungrazed vegetation < $^1/_{10}$ of area	points = 5 points = 3 points = 1 points = 0	5
D 1.4. Characteristics of seasonal ponding or inundation: *This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.* Area seasonally ponded is > ½ total area of wetland Area seasonally ponded is ¼ - ½ total area of wetland Area seasonally ponded is < ¼ total area of wetland	points = 3 points = 1 points = 0	3
Total for D 1	Add the points in the boxes above	13

Rating of Site Potential If score is: X **12- 16 = H** ___**6- 11 = M** ___ **0- 5 = L** *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1- D 2.3? Source_____	Yes = 1 No = 0	0
Total for D 2	Add the points in the boxes above	0

Rating of Landscape Potential If score is:___**3 or 4 = H** ___**1 or 2 = M** X **0 = L** *Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list?	Yes = 1 No = 0	
D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]?	Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality *(answer YES if there is a TMDL for the drainage or basin in which the wetland is found)*?	Yes = 2 No = 0	2
Total for D 3	Add the points in the boxes above	

Rating of Value If score is: X **2-4 = H** ___**1 = M** ___**0 = L** *Record the rating on the first page*

Wetland name or number "A"

DEPRESSIONAL WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and erosion.

Points (only 1 score per box)

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland:

Wetland has no surface water outlet	points = 8	8
Wetland has an intermittently flowing outlet	points = 4	
Wetland has a highly constricted permanently flowing outlet	points = 4	
Wetland has a permanently flowing unconstricted surface outlet	points = 0	

(If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")

D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).*

Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding	points = 8	
Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding	points = 6	
The wetland is a headwater wetland	points = 4	2
Seasonal ponding: 1 ft - < 2 ft	points = 4	
Seasonal ponding: 6 in - < 1 ft	points = 2	
Seasonal ponding: < 6 in or wetland has only saturated soils	points = 0	

Total for D 4	Add the points in the boxes above	10

Rating of Site Potential If score is: ___ **12-16 = H** X **6-11 = M** ___ **0-5 = L** *Record the rating on the first page*

D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?

D 5.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 5.2. Is > 10% of the area within 150 ft of the wetland in a land use that generates runoff?	Yes = 1 No = 0	0
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?	Yes = 1 No = 0	0
Total for D 5	Add the points in the boxes above	0

Rating of Landscape Potential If score is: ___ **3 = H** ___ **1 or 2 = M** X **0 = L** *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?

D 6.1. The wetland is in a landscape that has flooding problems.

Choose the description that best matches conditions around the wetland being rated. *Do not add points. Choose the highest score if more than one condition is met.*

The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND

Flooding occurs in sub-basin that is immediately down-gradient of wetland	points = 2	0
Surface flooding problems are in a sub-basin farther down-gradient	points = 1	

The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood.

Explain why _____	points = 0	
There are no problems with flooding downstream of the wetland	points = 0	

D 6.2. Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan?	Yes = 2 No = 0	0
Total for D 6	Add the points in the boxes above	0

Rating of Value If score is: ___ **2-4 = H** ___ **1 = M** X **0 = L** *Record the rating on the first page*

Wetland name or number A

These questions apply to wetlands of all HGM classes. **HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat	(only 1 score per box)
H 1.0. Does the wetland have the potential to provide habitat for many species?	
H 1.1. Structure of the plant community: *Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is >= ¼ ac or >= 10% of the wetland if wetland is < 2.5 ac.* X Aquatic bed X Emergent plants 0-12 in (0-30 cm) high are the highest layer and have > 30% cover X Emergent plants >12-40 in (>30-100 cm) high are the highest layer with >30% cover X Emergent plants > 40 in (> 100 cm) high are the highest layer with >30% cover ___Scrub-shrub (areas where shrubs have >30% cover) ___Forested (areas where trees have >30% cover) 4 or more checks: points = 3 3 checks: points = 2 2 checks: points = 1 1 check: points = 0	1
H 1.2. Is one of the vegetation types Aquatic Bed? Yes = 1 No = 0	
H 1.3. Surface water H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least ¼ ac **OR** 10% of its area during the March to early June **OR** in August to the end of September? *Answer YES for Lake Fringe wetlands.* Yes = 3 points & go to H 1.4 No = go to H 1.3.2 H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least ¼ ac or 10% of its area? *Answer yes only if H 1.3.1 is No.* Yes = 3 No = 0	0
H 1.4. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft^2. D*ifferent patches of the same species can be combined to meet the size threshold. You do not have to name the species.* *Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)* # of species ____ Scoring: > 9 species: points = 2 4-9 species: points = 1 < 4 species: points = 0	0
H 1.5. Interspersion of habitats Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none. *Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.* **None** = 0 points **Low** = 1 point **Moderate** = 2 points All three diagrams in this row are **High** = 3 points Riparian braided channels with 2 classes	Figure__ 1

Wetland name or number A

H 1.6. Special habitat features *Check the habitat features that are present in the wetland. The number of checks is the number of points.* ____Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream. ____Cattails or bulrushes are present within the wetland. ____Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge. ____Emergent or shrub vegetation in areas that are permanently inundated/ponded. ____Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity ____ Invasive species cover less than 20% in each stratum of vegetation *(canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)*	0
Total for H 1 — Add the points in the boxes above	2

Rating of Site Potential If score is: ___**15-18 = H** ___**7-14 = M** X **0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support habitat functions of the site?	
H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is: *Calculate:* % undisturbed habitat 4 + [(% moderate and low intensity land uses)/2] 19 = 23 % > 1/3 (33.3%) of 1 km Polygon — points = 3 20-33% of 1km Polygon — points = 2 10-19% of 1km Polygon — points = 1 <10% of 1km Polygon — points = 0 38/2	3 2
H 2.2. Undisturbed habitat in 1 km Polygon around wetland. *Calculate:* % undisturbed habitat 12 + [(% moderate and low intensity land uses)/2] 24 = 36 % Undisturbed habitat > 50% of Polygon — points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches — points = 2 Undisturbed habitat 10 - 50% and > 3 patches — points = 1 Undisturbed habitat < 10% of Polygon — points = 0 48/2	2 1
H 2.3. Land use intensity in 1 km Polygon: > 50% of Polygon is high intensity land use — points = (-2) Does not meet criterion above — points = 0	0
H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. *Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs* — Yes = 3, No = 0	0
Total for H 2 — Add the points in the boxes above	5

Rating of Landscape Potential If score is: X **4-9 = H** X **1-3 = M** ___**< 1 = L** *Record the rating on the first page* 3

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose the highest score that applies to the wetland being rated* Site meets ANY of the following criteria: — points = 2 — It has 3 or more priority habitats within 100 m (see Appendix B) — It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists) — It is mapped as a location for an individual WDFW species — It is a Wetland of High Conservation Value as determined by the Department of Natural Resources — It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats within 100 m (see Appendix B) — points = 1 Site does not meet any of the criteria above — points = 0	0

Rating of Value If score is: ___**2 = H** ___**1 = M** X **0 = L** *Record the rating on the first page*

Wetland name or number "B"

RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): "B" - 21st Project Date of site visit: 6/15/22

Rated by William T. Towey Trained by Ecology? X Yes ___ No Date of training 04/16/15

HGM Class used for rating Depressional Wetland has multiple HGM classes? ___ Y X N

NOTE: Form is not complete without the figures requested (*figures can be combined*).

Source of base aerial photo/map Google Earth, NWI Map, Soil Map, PHS info HGM map, 1Km map.

OVERALL WETLAND CATEGORY ~~III~~ IV (based on functions X or special characteristics ___)

1. Category of wetland based on FUNCTIONS

___ **Category I** – Total score = 22-27

___ **Category II** – Total score = 19-21

X **Category III** – Total score = 16-18

___ **Category IV** – Total score = 9-15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
	Circle the appropriate ratings			
Site Potential	H M L	H M L	H M L	
Landscape Potential	H M L	H M L	H M L	
Value	H M L	H M L	H M L	TOTAL
Score Based on Ratings	7	4	5 4	16 15

Score for each function based on three ratings (*order of ratings is not important*)

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY *Circle the appropriate category*
Vernal Pools	II III
Alkali	I
Wetland of High Conservation Value	I
Bog and Calcareous Fens	I
Old Growth or Mature Forest – slow growing	I
Aspen Forest	I
Old Growth or Mature Forest – fast growing	II
Floodplain forest	II
None of the above	

Wetland name or number B

DEPRESSIONAL WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

	Points (only 1 score per box)
D 1.0. Does the site have the potential to improve water quality?	
D 1.1. Characteristics of surface water outflows from the wetland: Wetland has no surface water outlet — points = 5 Wetland has an intermittently flowing outlet — points = 3 Wetland has a highly constricted permanently flowing outlet — points = 3 Wetland has a permanently flowing, unconstricted, surface outlet — points = 1	5
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions of soils)* YES = 3 NO = 0	0
D 1.3. Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes) Wetland has persistent, ungrazed, vegetation for > 2/3 of area — points = 5 Wetland has persistent, ungrazed, vegetation from 1/3 to 2/3 of area — points = 3 Wetland has persistent, ungrazed vegetation from 1/10 to < 1/3 of area — points = 1 Wetland has persistent, ungrazed vegetation < 1/10 of area — points = 0	5
D 1.4. Characteristics of seasonal ponding or inundation: *This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.* Area seasonally ponded is > ½ total area of wetland — points = 3 Area seasonally ponded is ¼ - ½ total area of wetland — points = 1 Area seasonally ponded is < ¼ total area of wetland — points = 0	3
Total for D 1 — Add the points in the boxes above	13

Rating of Site Potential If score is: X **12- 16 = H** ___ **6- 11 = M** ___ **0- 5 = L** *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1- D 2.3? Source_____ Yes = 1 No = 0	0
Total for D 2 — Add the points in the boxes above	0

Rating of Landscape Potential If score is: ___ **3 or 4 = H** ___ **1 or 2 = M** X **0 = L** *Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list? Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]? Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality *(answer YES if there is a TMDL for the drainage or basin in which the wetland is found)*? Yes = 2 No = 0	2
Total for D 3 — Add the points in the boxes above	3

Rating of Value If score is: X **2-4 = H** ___ **1 = M** ___ **0 = L** *Record the rating on the first page*

Wetland name or number B

DEPRESSIONAL WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and erosion.

Points (only 1 score per box)

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland:

Wetland has no surface water outlet	points = 8	8
Wetland has an intermittently flowing outlet	points = 4	
Wetland has a highly constricted permanently flowing outlet	points = 4	
Wetland has a permanently flowing unconstricted surface outlet	points = 0	

(If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")

D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).*

Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding	points = 8	
Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding	points = 6	2
The wetland is a headwater wetland	points = 4	
Seasonal ponding: 1 ft - < 2 ft	points = 4	
Seasonal ponding: 6 in - < 1 ft	points = 2	
Seasonal ponding: < 6 in or wetland has only saturated soils	points = 0	
Total for D 4	Add the points in the boxes above	10

Rating of Site Potential If score is: ___**12-16 = H** X **6-11 = M** ___**0-5 = L** *Record the rating on the first page*

D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?

D 5.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 5.2. Is > 10% of the area within 150 ft of the wetland in a land use that generates runoff?	Yes = 1 No = 0	0
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?	Yes = 1 No = 0	0
Total for D 5	Add the points in the boxes above	0

Rating of Landscape Potential If score is: ___**3 = H** ___**1 or 2 = M** X **0 = L** *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?

D 6.1. The wetland is in a landscape that has flooding problems.

Choose the description that best matches conditions around the wetland being rated. *Do not add points. Choose the highest score if more than one condition is met.*

The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND

Flooding occurs in sub-basin that is immediately down-gradient of wetland	points = 2	
Surface flooding problems are in a sub-basin farther down-gradient	points = 1	

The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. 0

Explain why _____ points = 0

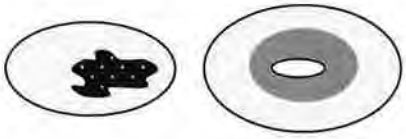
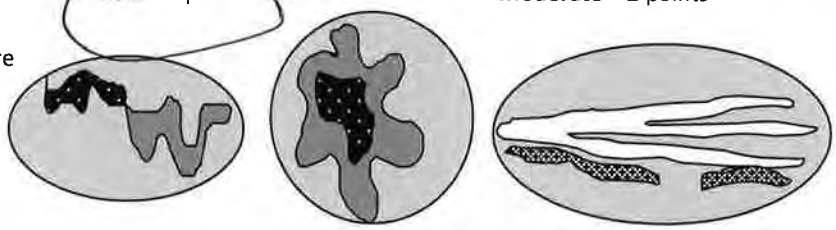
There are no problems with flooding downstream of the wetland points = 0

D 6.2. Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0 0

Total for D 6 Add the points in the boxes above 0

Rating of Value If score is: ___**2-4 = H** ___**1 = M** X **0 = L** *Record the rating on the first page*

Wetland name or number B

These questions apply to wetlands of all HGM classes. **HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat	(only 1 score per box)
H 1.0. Does the wetland have the potential to provide habitat for many species?	
H 1.1. Structure of the plant community: *Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is >= ¼ ac or >= 10% of the wetland if wetland is < 2.5 ac.* X Aquatic bed X Emergent plants 0-12 in (0-30 cm) high are the highest layer and have > 30% cover ___ Emergent plants >12-40 in (>30-100 cm) high are the highest layer with >30% cover X Emergent plants > 40 in (> 100 cm) high are the highest layer with >30% cover ___ Scrub-shrub (areas where shrubs have >30% cover) ___ Forested (areas where trees have >30% cover) 4 or more checks: points = 3 3 checks: points = 2 2 checks: points = 1 1 check: points = 0	1
H 1.2. Is one of the vegetation types Aquatic Bed? Yes = 1 No = 0	0
H 1.3. Surface water H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least ¼ ac **OR** 10% of its area during the March to early June **OR** in August to the end of September? *Answer YES for Lake Fringe wetlands.* Yes = 3 points & go to H 1.4 No = go to H 1.3.2 H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least ¼ ac or 10% of its area? *Answer yes only if H 1.3.1 is No.* Yes = 3 No = 0	0
H 1.4. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft^2. D*ifferent patches of the same species can be combined to meet the size threshold. You do not have to name the species.* *Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)* # of species ____ Scoring: > 9 species: points = 2 4-9 species: points = 1 < 4 species: points = 0	0
H 1.5. Interspersion of habitats Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none. *Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.*  **None** = 0 points  **Low** = 1 point  **Moderate** = 2 points All three diagrams in this row are **High** = 3 points  Riparian braided channels with 2 classes	Figure 1

Wetland name or number B

H 1.6. Special habitat features *Check the habitat features that are present in the wetland. The number of checks is the number of points.* ____Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream. ____Cattails or bulrushes are present within the wetland. ____Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge. ____Emergent or shrub vegetation in areas that are permanently inundated/ponded. ____Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity ____ Invasive species cover less than 20% in each stratum of vegetation *(canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)*	0
Total for H 1 — Add the points in the boxes above	2

Rating of Site Potential If score is: ___**15-18 = H** ___**7-14 = M** X **0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support habitat functions of the site?	
H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is: *Calculate:* % undisturbed habitat 4 + [(% moderate and low intensity land uses)/2] 19 = 23 % > 1/3 (33.3%) of 1 km Polygon — points = 3 20-33% of 1km Polygon — points = 2 10-19% of 1km Polygon — points = 1 <10% of 1km Polygon — points = 0 38/2	3 2
H 2.2. Undisturbed habitat in 1 km Polygon around wetland. *Calculate:* % undisturbed habitat 12 + [(% moderate and low intensity land uses)/2] 24 = 36 % Undisturbed habitat > 50% of Polygon — points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches — points = 2 Undisturbed habitat 10 - 50% and > 3 patches — points = 1 Undisturbed habitat < 10% of Polygon — points = 0 48/2	2 1
H 2.3. Land use intensity in 1 km Polygon: > 50% of Polygon is high intensity land use — points = (2) Does not meet criterion above — points = 0	0
H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. *Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs* — Yes = 3 No = 0	0
Total for H 2 — Add the points in the boxes above	3

Rating of Landscape Potential If score is: X **4-9 = H** X **1-3 = M** ___**< 1 = L** *Record the rating on the first page* 3

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose the highest score that applies to the wetland being rated* Site meets ANY of the following criteria: — points = 2 — It has 3 or more priority habitats within 100 m (see Appendix B) — It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists) — It is mapped as a location for an individual WDFW species — It is a Wetland of High Conservation Value as determined by the Department of Natural Resources — It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats within 100 m (see Appendix B) — points = 1 Site does not meet any of the criteria above — points = 0	0

Rating of Value If score is: ___**2 = H** ___**1 = M** X **0 = L** *Record the rating on the first page*

Wetland name or number "C" "1"

RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): "C" -21st Project Date of site visit: 6/15/22

Rated by William T. Towey Trained by Ecology? X Yes ___ No Date of training 04/16/15

HGM Class used for rating Depressional Wetland has multiple HGM classes? ___Y X N

NOTE: Form is not complete without the figures requested (*figures can be combined*).

Source of base aerial photo/map Google Earth, NWI Map, Soil Map, PHS info, HGM Map, 1 Km - Map

OVERALL WETLAND CATEGORY III (based on functions X or special characteristics___)

IV

1. Category of wetland based on FUNCTIONS

___**Category I** – Total score = 22-27

___**Category II** – Total score = 19-21

X **Category III** – Total score = 16-18

___**Category IV** – Total score = 9-15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
	Circle the appropriate ratings			
Site Potential	H M L	H M L	H M L	
Landscape Potential	H M L	H M L	H M L	
Value	H M L	H M L	H M L	TOTAL
Score Based on Ratings	7	4	5 4	16

15

Score for each function based on three ratings *(order of ratings is not important)*

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY *Circle the appropriate category*
Vernal Pools	II III
Alkali	I
Wetland of High Conservation Value	I
Bog and Calcareous Fens	I
Old Growth or Mature Forest – slow growing	I
Aspen Forest	I
Old Growth or Mature Forest – fast growing	II
Floodplain forest	II
None of the above	

Wetland name or number "C"

DEPRESSIONAL WETLANDS **Water Quality Functions** - Indicators that the site functions to improve water quality		Points (only 1 score per box)
D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland: Wetland has no surface water outlet Wetland has an intermittently flowing outlet Wetland has a highly constricted permanently flowing outlet Wetland has a permanently flowing, unconstricted, surface outlet	points = 5 ~~points = 3~~ points = 3 points = 1	5
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions of soils)*	YES = 3 NO = 0	0
D 1.3. Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes) Wetland has persistent, ungrazed, vegetation for > $^2/_3$ of area Wetland has persistent, ungrazed, vegetation from $^1/_3$ to $^2/_3$ of area Wetland has persistent, ungrazed vegetation from $^1/_{10}$ to < $^1/_3$ of area Wetland has persistent, ungrazed vegetation < $^1/_{10}$ of area	points = 5 ~~points = 3~~ points = 1 points = 0	5
D 1.4. Characteristics of seasonal ponding or inundation: *This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.* Area seasonally ponded is > ½ total area of wetland Area seasonally ponded is ¼ - ½ total area of wetland Area seasonally ponded is < ¼ total area of wetland	points = 3 ~~points = 1~~ points = 0	3
Total for D 1	Add the points in the boxes above	13

Rating of Site Potential If score is: X **12- 16 = H** ___ **6- 11 = M** ___ **0- 5 = L** *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland? City hook up	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1- D 2.3? Source_____	Yes = 1 No = 0	0
Total for D 2	Add the points in the boxes above	0

Rating of Landscape Potential If score is: ___ **3 or 4 = H** ___ **1 or 2 = M** X **0 = L** *Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list?	Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [~~303(d) list~~, eutrophic lakes, problems with nuisance and toxic algae]?	Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality *(~~answer~~ YES if there is a TMDL for the drainage or basin in which the wetland is found)*?	Yes = 2 No = 0	2
Total for D 3	Add the points in the boxes above	3

Rating of Value If score is: X **2-4 = H** ___ **1 = M** ___ **0 = L** *Record the rating on the first page*

Wetland name or number C

DEPRESSIONAL WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and erosion.

	Points (only 1 score per box)
D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. Characteristics of surface water outflows from the wetland:	
Wetland has no surface water outlet — points = 8	8
Wetland has an intermittently flowing outlet — points = 4	
Wetland has a highly constricted permanently flowing outlet — points = 4	
Wetland has a permanently flowing unconstricted surface outlet — points = 0	
(If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")	
D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).*	
Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding — points = 8	2
Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding — points = 6	
The wetland is a headwater wetland — points = 4	
Seasonal ponding: 1 ft - < 2 ft — points = 4	
Seasonal ponding: 6 in - < 1 ft — points = 2	
Seasonal ponding: < 6 in or wetland has only saturated soils — points = 0	
Total for D 4 — Add the points in the boxes above	10

Rating of Site Potential If score is: ___**12-16 = H** X **6-11 = M** ___**0-5 = L** *Record the rating on the first page*

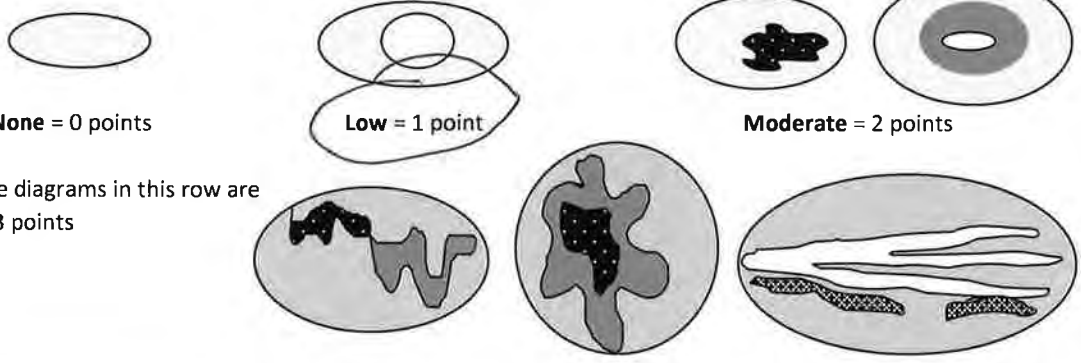
D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	
D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	0
D 5.2. Is > 10% of the area within 150 ft of the wetland in a land use that generates runoff? Yes = 1 No = 0	0
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses? Yes = 1 No = 0	0
Total for D 5 — Add the points in the boxes above	0

Rating of Landscape Potential If score is: ___**3 = H** ___**1 or 2 = M** X **0 = L** *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?	
D 6.1. The wetland is in a landscape that has flooding problems.	
Choose the description that best matches conditions around the wetland being rated. *Do not add points. Choose the highest score if more than one condition is met.*	
The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND	
Flooding occurs in sub-basin that is immediately down-gradient of wetland — points = 2	0
Surface flooding problems are in a sub-basin farther down-gradient — points = 1	
The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood.	
Explain why _____ — points = 0	
There are no problems with flooding downstream of the wetland — points = 0	
D 6.2. Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0	0
Total for D 6 — Add the points in the boxes above	0

Rating of Value If score is: ___**2-4 = H** ___**1 = M** X **0 = L** *Record the rating on the first page*

Wetland name or number C

These questions apply to wetlands of all HGM classes. **HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat	(only 1 score per box)
H 1.0. Does the wetland have the potential to provide habitat for many species?	
H 1.1. Structure of the plant community: *Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is >= ¼ ac or >= 10% of the wetland if wetland is < 2.5 ac.* ___Aquatic bed X Emergent plants 0-12 in (0-30 cm) high are the highest layer and have > 30% cover ___Emergent plants >12-40 in (>30-100 cm) high are the highest layer with >30% cover X Emergent plants > 40 in (> 100 cm) high are the highest layer with >30% cover ___Scrub-shrub (areas where shrubs have >30% cover) ___Forested (areas where trees have >30% cover) 4 or more checks: points = 3 ~~3 checks: points = 2~~ 2 checks: points = 1 ~~1 check: points = 0~~	1
H 1.2. Is one of the vegetation types Aquatic Bed? Yes = 1 No = 0	0
H 1.3. Surface water H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least ¼ ac **OR** 10% of its area during the March to early June **OR** in August to the end of September? *Answer YES for Lake Fringe wetlands.* Yes = 3 points & go to H 1.4 No = go to H 1.3.2 H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least ¼ ac or 10% of its area? *Answer yes only if H 1.3.1 is No.* Yes = 3 No = 0	0
H 1.4. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft^2. D*ifferent patches of the same species can be combined to meet the size threshold. You do not have to name the species.* *Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)* # of species ____ Scoring: > 9 species: points = 2 ~~4-9 species: points = 1~~ < 4 species: points = 0	0
H 1.5. Interspersion of habitats Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none. *Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.*  **None** = 0 points **Low** = 1 point **Moderate** = 2 points All three diagrams in this row are **High** = 3 points Riparian braided channels with 2 classes	Figure__ 1

Wetland name or number C

H 1.6. Special habitat features *Check the habitat features that are present in the wetland. The number of checks is the number of points.* ____Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream. ____Cattails or bulrushes are present within the wetland. ____Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge. ____Emergent or shrub vegetation in areas that are permanently inundated/ponded. ____Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity ____ Invasive species cover less than 20% in each stratum of vegetation *(canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)*	0
Total for H 1 — Add the points in the boxes above	2

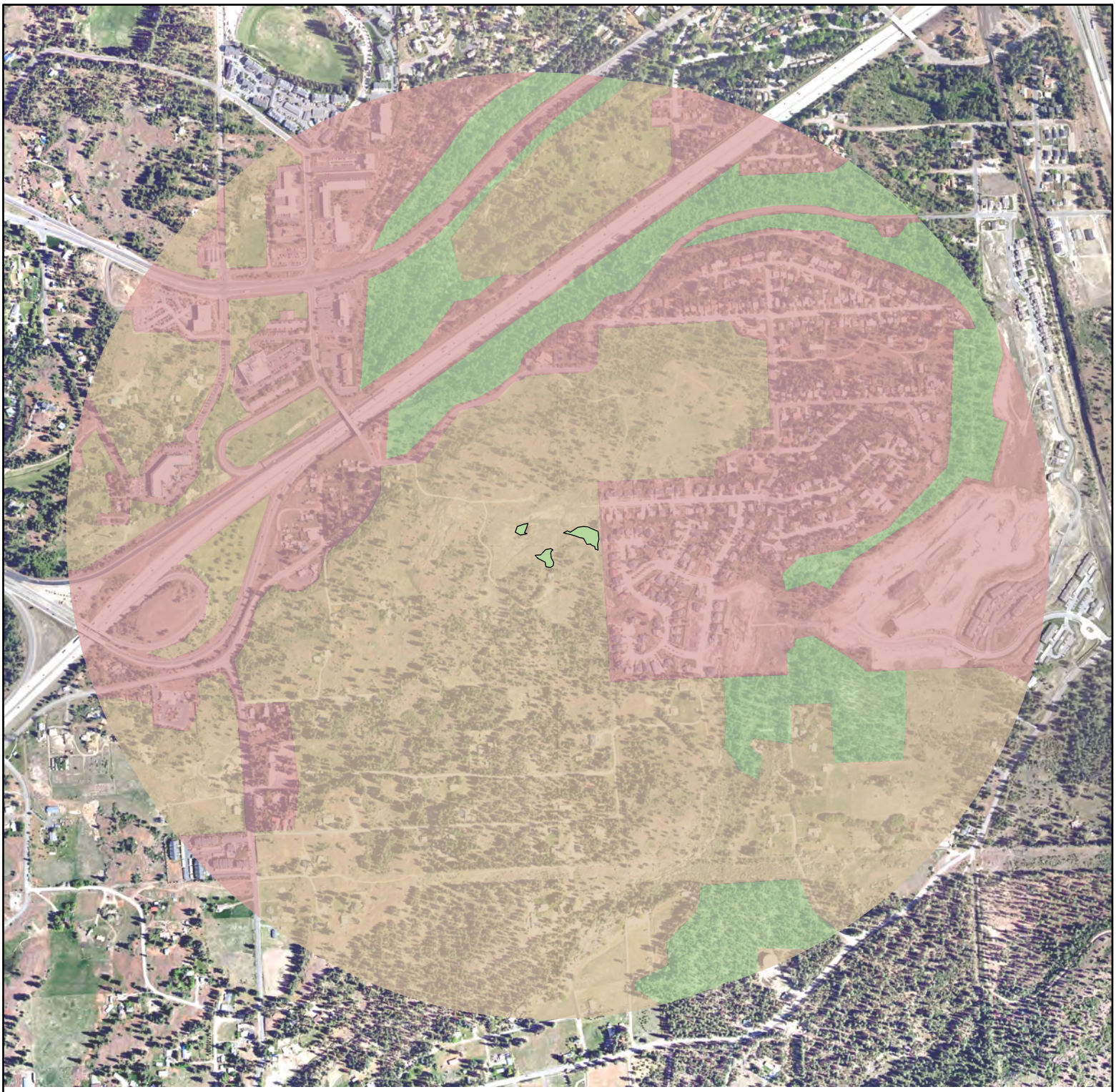
Rating of Site Potential If score is: ___ **15-18 = H** ___ **7-14 = M** X **0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support habitat functions of the site?	
H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is: *Calculate:* % undisturbed habitat 4 + [(% moderate and low intensity land uses)/2] 19 = 23 % > 1/3 (33.3%) of 1 km Polygon — points = 3 20-33% of 1km Polygon — points = 2 10-19% of 1km Polygon — points = 1 <10% of 1km Polygon — points = 0 37% 38/2	3 2
H 2.2. Undisturbed habitat in 1 km Polygon around wetland. *Calculate:* % undisturbed habitat 12 + [(% moderate and low intensity land uses)/2] 24 = 36 % Undisturbed habitat > 50% of Polygon — points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches — points = 2 Undisturbed habitat 10 - 50% and > 3 patches — points = 1 Undisturbed habitat < 10% of Polygon — points = 0 48/2 47%	2 1
H 2.3. Land use intensity in 1 km Polygon: > 50% of Polygon is high intensity land use — points = (-2) Does not meet criterion above — points = 0	0
H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. *Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs* — Yes = 3 No = 0	0
Total for H 2 — Add the points in the boxes above	5

Rating of Landscape Potential If score is: X **4-9 = H** X **1-3 = M** ___ **< 1 = L** *Record the rating on the first page* 3

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose the highest score that applies to the wetland being rated* Site meets ANY of the following criteria: — points = 2 — It has 3 or more priority habitats within 100 m (see Appendix B) — It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists) — It is mapped as a location for an individual WDFW species — It is a Wetland of High Conservation Value as determined by the Department of Natural Resources — It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats within 100 m (see Appendix B) — points = 1 Site does not meet any of the criteria above — points = 0	0

Rating of Value If score is: ___ **2 = H** ___ **1 = M** X **0 = L** *Record the rating on the first page*



1km Buffer: 893 ac
High Intensity: 354 ac
Moderate/Low Intensity: 433 ac (38% accessible, 48% total)
Relatively Disturbed: 106 ac (4% accessible, 12% total)

N

Feet
0 500 1,000

SOURCE: SPOKANE AERIAL 2009

wet.land

LAND USE INTENSITY MAP
Beard Addition (#Z23-190PPUD)
Critical Area Addendum
Spokane, Washington

#0145
AUG 2023

FIGURE 1

Attachment 4

Figures

1. Existing Conditions Map

LEGEND

- Project Site
- Wetlands (Surveyed)
- Wetland Buffer (50')

Wetland Summary
Wetland A - Category IV - 50' Standard Buffer
Wetland B - Category IV - 50' Standard Buffer
Wetland C - Category IV - 50' Standard Buffer

N

0 100 200 Feet

SOURCE: SPOKANE AERIAL 2009

wet.land

EXISTING CONDITIONS MAP
Beard Addition (#Z23-190PPUD)
Critical Area Addendum
Spokane, Washington

#0145
SEPT 2023
FIGURE 1

Attachment 5

Mitigation Plan, Whipple Consulting Engineers, Inc.

SW$\frac{1}{4}$, SEC.26, T.25N., R.42E., W.M.

UNDERGROUND SERVICE ALERT
ONE-CALL NUMBER
811
CALL TWO BUSINESS DAYS BEFORE YOU DIG

WETLAND LEGEND

DESCRIPTION	WETLAND A	WETLAND B	WETLAND C	TOTALS
EX. WETLANDS AREA TO REMAIN	4,810 SF	9,181 SF	–	13,860 SF
WETLAND IMPACT (TO BE REMOVED)	–	–	(19,358 SF)	(19,358 SF)

EX. BUFFER AREA

*AREA REPLACEMENT FOR WETLAND C IS AT 2:1 = 38,716 SF
SEE NEXT SHEET

LOT NOT A PART

EXISTING 50' BUFFER

EX. WETLANDS 'A' 4,810 SF TO REMAIN

EXISTING 50' BUFFER

EX. WETLANDS 'C' 19,358 SF TO BE REMOVED

NOT A PART SUBDIVISION

EX. WETLANDS 'B' 9,181 SF TO REMAIN

EXISTING 50' BUFFER

PP N-S

SSMH RIM: 2241.84 IE N 2240

LUM

OPP E

N
W E
S

GRAPHIC SCALE
50 0 25 50 100
(IN FEET)
1 inch = 50 ft.

11/2/23

NO.	DATE	BY	REVISIONS
A	06/26/23	WCE	ORIGINAL PREPARATION

SCALE:
HORIZONTAL: 1" = 50'
VERTICAL: N/A

PROJ #: 21-3109
DATE: 11/02/23
DRAWN: RMA
REVIEWED:

	CIVIL
	STRUCTURAL
	SURVEYING
	TRAFFIC
X	PLANNING
	LANDSCAPE
	OTHER

WCE
WHIPPLE CONSULTING ENGINEERS
21 S PINES ROAD
SPOKANE VALLEY, WA 99206
PH: 509-893-2617 FAX: 509-926-0227

BEARD ADDITION
EXISTING WETLAND EXHIBIT
CUMBERLAND LANE & 21ST AVENUE
SPOKANE, WA

SHEET 1 OF 5

JOB NUMBER 21-3109

P:\WCE_WORK\2021 WCE PROJECTS\2021-3109 LENNAR - BEARD ADDITION TO WEST BLUFF\DWG\3109-MIT MAP.DWG PLOT DATE:11/02/23

SW$\frac{1}{4}$, SEC.26, T.25N., R.42E., W.M.

UNDERGROUND SERVICE ALERT
ONE-CALL NUMBER
811
CALL TWO BUSINESS DAYS BEFORE YOU DIG

WETLAND LEGEND

DESCRIPTION	WETLAND A	WETLAND B	PROPOSED	TOTALS
EX. WETLANDS AREA TO REMAIN	4,810 SF	9,181 SF	–	13,991 SF
WETLAND REPLACEMENT @ 2:1 FROM WETLAND C	–	–	38,716 SF REQ.	38,716 SF
TOTAL WETLAND AREA PROVIDED				52,707 SF
BUFFER TO REMAIN	12,993 SF	23,010 SF		36,003 SF
PROPOSED WETLAND BUFFER			22,796 SF	22,796 SF
TOTAL 50' BUFFER AREA				58,799 SF

LOT NOT A PART

50' BUFFER (TYP)

50' BUFFER LINE

WETLAND 'A' TO REMAIN 4,810 SF

REPLACEMENT WETLAND FOR WETLAND C 38,716 SF

WETLAND 'B' TO REMAIN 9,181 SF

50' BUFFER (TYP)

50' BUFFER LINE

50' BUFFER LINE

NOT A PART SUBDIVISION

PP N-S

SSMH RIM: 2241.84 IE N 2240

LUM

PP N-S

PP E

N

W E

S

GRAPHIC SCALE
50 0 25 50 100
(IN FEET)
1 inch = 50 ft.

11/2/23

NO.	DATE	BY	REVISIONS
A	06/26/23	WCE	ORIGINAL PREPARATION

SCALE:
HORIZONTAL: 1" = 50'
VERTICAL: N/A

PROJ #: 21-3109
DATE: 11/02/23
DRAWN: RMA
REVIEWED:

[X] PLANNING
CIVIL
STRUCTURAL
SURVEYING
TRAFFIC
LANDSCAPE
OTHER

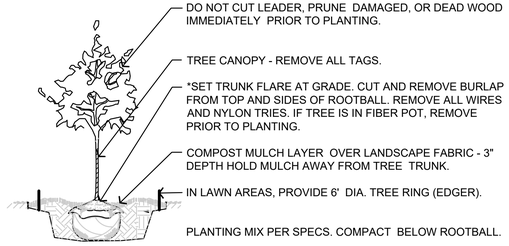
WCE
WHIPPLE CONSULTING ENGINEERS
21 S PINES ROAD
SPOKANE VALLEY, WA 99206
PH: 509-893-2617 FAX: 509-926-0227

BEARD ADDITION
WETLAND BUFFER EXHIBIT
CUMBERLAND LANE & 21ST AVENUE
SPOKANE, WA

SHEET 2 OF 5

JOB NUMBER 21-3109

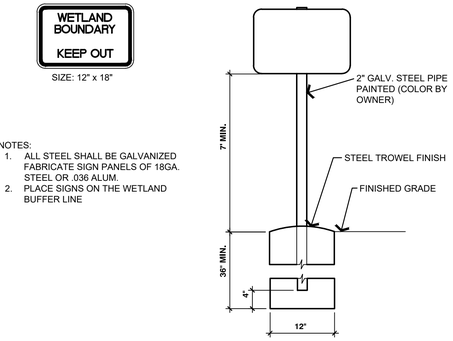
P:\WCE_WORK\2021 WCE PROJECTS\2021-3109 LENNAR- BEARD ADDITION TO WEST BLUFF\DWG\3109-MIT MAP.DWG PLOT DATE=11/02/23



NOTES:
* USE TRUNK FLARE TO DETERMINE THE REAL TOP OF THE ROOTBALL, THEN PLANT TRUNK FLARE AND TOP OF ROOTBALL AT GRADE.

1 DECIDUOUS TREE DETAIL

NOT TO SCALE M-SPV-03



SIZE: 12" x 18"

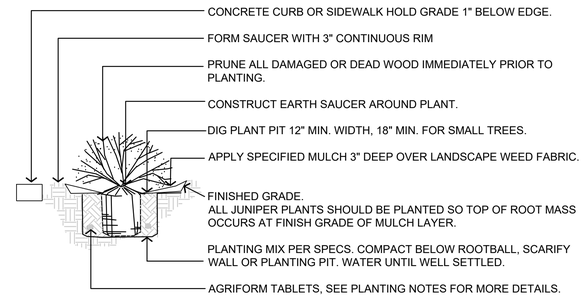
NOTES:
1. ALL STEEL SHALL BE GALVANIZED FABRICATE SIGN PANELS OF 18GA. STEEL OR .036 ALUM.
2. PLACE SIGNS ON THE WETLAND BUFFER LINE

2 WETLAND SIGN DETAIL

NOT TO SCALE M-WE-01

3 SHRUB DETAIL

NOT TO SCALE M-SPV-05



PLANTING GUIDELINES

1. TREES– 12 FEET MIN. ON CENTER
   SHRUBS– 8 FEET MIN. ON CENTER.
2. PLANT IN A NATURAL PATTERN WITH LIKE PLANTS BLENDING INTO THE REST OF THE PLANT MATERIAL IN THE MIX.
3. SPACING SHOULD NOT BE SYMMETRICAL.

WETLAND CREATION

1. GRADE WETLAND PER CIVIL PLANS.
2. DECOMPACT SOILS, SCARIFY AND AMEND WITH TOPSOIL OR COMPOST, AS DETERMINED NECESSARY.
3. DESIGN BUILD A TEMPORARY OR PERMANENT IRRIGATION SYSTEM.
4. PLANT NATIVE TREES AND SHRUBS.
5. INSTALL CRITICAL AREA FENCING AND SIGNS AT BUFFER BOUNDARY.

WETLAND BUFFER CREATION

1. CLEARING AND GRUBBING ALL INVASIVE, NON–NATIVE WEEDY SPECIES IN THE ENHANCEMENT AREAS.
2. DECOMPACT SOILS, SCARIFY AND AMEND WITH TOPSOIL OR COMPOST, AS DETERMINED NECESSARY
3. DESIGN BUILD A TEMPORARY OR PERMANENT IRRIGATION SYSTEM.
4. INSTALL 3 INCHES OF PARK MULCH IN ALL BARE SOIL AREAS.
5. PLANT NATIVE TREES AND SHRUBS.

UNDERGROUND SERVICE ALERT
ONE–CALL NUMBER
811
CALL TWO BUSINESS DAYS BEFORE YOU DIG

PLANTING LEGEND

SYMBOL	DESCRIPTION
	MIX 1
	MIX 2
	MIX 3
	MIX 4
	MIX 5
	MIX 6

SYMBOL	DESCRIPTION
	8' ASPHALT PATH
	8' CRUSHED GRAVEL PATH
	SPLIT RAIL FENCE

PLANT COUNTS

			A	B	C
MIX 1:					
QA	QUAKING ASPEN/POPULUS TREMULOIDES	@ 20%	12	13	25
TA	THINLEAF ALDER/ALNUS TENUIFOLIA	@ 20%	12	13	25
DW	DOGWOOD/CORNUS SERVICEA	@ 60%	35	39	75
MIX 2:					
SS	SERVICEBERRY/AMELANCHIER ALNIFOLIA	@ 20%	22		
WW	DUNE WILLOW/SALIX CORDATA	@ 26%	29		
SB	SNOWBERRY/SYMPHORICARPOS ALBUS	@ 27%	30		
DW	DOGWOOD /CORNUS SERVICEA	@ 27%	30		
MIX 3:					
CC	CHOKECHERRY/PRUNUS VIRGINIANA	@ 20%	15	10	
RR	ROSE/NOOTKA ROSE	@ 40%	32	22	
SB	SNOWBERRY/SYMPHORICARPOS ALBUS	@ 40%	32	22	
MIX 4:					
CC	CHOKECHERRY/PRUNUS VIRGINIANA	@ 20%	21	10	
GC	GOLDEN CURRANT/RIBES AUREUM	@ 26%	28	14	
MO	MOCKORANGE/PHILADELPHUS LEWISII	@ 27%	29	15	
RR	ROSE/NOOTKA ROSE	@ 27%	29	15	

MIX 5:
WETLAND GRASS MIX: 34,540 SF
BLUE WILD RYE
WESTERN MANNAGRASS
MEADOW BARLEY
AMERICAN SLOUGHGRASS
TUFTED HAIRGRASS

2–3 POUNDS PER 1,000 SF

MIX 6:
UPLAND GRASS MIX: 18,307 SF
BROME
CRESTED WHEAT GRASS
FESCUE
WILDRYE GRASS

2–3 POUNDS PER 1,000 SF

TOTAL COUNTS

	NAME	SIZE	NUMBER
QA	QUAKING ASPEN POPULUS TREMULOIDES	1 GAL	50
TA	THINLEAF ALDER ALNUS TENUIFOLIA	1 GAL	50
DW	DOGWOOD CORNUS STOLONIFERA	1 GAL	179
SS	SERVICEBERRY AMELANCHIER ALNIFOLIA	1 GAL	22
WW	DUNE WILLOW SALIX HOOKERIANA	1 GAL	29
SB	SNOWBERRY SYMPHORICARPOS ALBUS	I GAL	54
CC	CHOKECHERRY PRUNUS VIRGINIANA	1 GAL	56
RR	ROSE ROSA WOODSII	1 GAL	98
GC	GOLDEN CURRANT RIBES AUREUM	1 GAL	42
MO	MOCKORANGE PHILADELPHUS LEWISII	1 GAL	44

N
W E
S

GRAPHIC SCALE
50 0 25 50 100
(IN FEET)
1 inch = 50 ft.

11/2/23

REFERENCE NOTES SCHEDULE

6	POINT OF CONNECTION FOR THE SEPERATEL` METERED IRRIGATION SYSTEM. PROVIDE DCVA PER CITY STANDARDS.
9	SPLIT RAIL FENCE OR EUAL AROUND THE WETLAND` BUFFER WITH SIGNS EVERY 50'

NO.	DATE	BY	REVISIONS
A	06/26/23	WCE	ORIGINAL PREPARATION

SCALE:
HORIZONTAL: 1" = 50'
VERTICAL: N/A

PROJ #: 21-3109
DATE: 11/02/23
DRAWN: SMM
REVIEWED:

- CIVIL
- STRUCTURAL
- SURVEYING
- TRAFFIC
- X PLANNING
- LANDSCAPE
- OTHER

WCE
WHIPPLE CONSULTING ENGINEERS
21 S PINES ROAD
SPOKANE VALLEY, WA 99206
PH: 509-893-2617 FAX: 509-926-0227

BEARD ADDITION
MITIGATION PLAN
CUMBERLAND LANE & 21ST AVENUE
SPOKANE, WA

SHEET 3 OF 5

JOB NUMBER 21-3109

P:\WCE_WORK\2021 WCE PROJECTS\2021-3109 LENNAR – BEARD ADDITION TO WEST BLUFF\DWG\3109-MIT MAP.DWG PLOT DATE:11/02/23

SW¼, SEC.26, T.25N., R.42E., W.M.

LOT NOT A PART

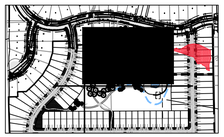
4

MATCHLINE 5 OF 5

2233

2234

UNDERGROUND SERVICE ALERT
ONE-CALL NUMBER
811
CALL TWO BUSINESS DAYS BEFORE YOU DIG



OVERVIEW
NOT TO SCALE

PLANT SCHEDULE

TREES	CODE	QTY	BOTANICAL / COMMON NAME	SIZE
	BC	19	BETULA NIGRA 'CULLY' HERITAGE® RIVER BIRCH	2" CAL.
	PP	31	PINUS PONDEROSA PONDEROSA PINE	7-8' HT.
	PT	22	POPULUS TREMULOIDES QUAKING ASPEN	1 1/2" CAL
SHRUBS	**CODE**	**QTY**	**BOTANICAL / COMMON NAME**	**SIZE**
	CR	18	CORNUS SERICEA RED TWIG DOGWOOD	1 GAL
	SA	68	SYMPHORICARPOS ALBUS COMMON WHITE SNOWBERRY	1 GAL
GROUND COVERS	**CODE**	**QTY**	**BOTANICAL / COMMON NAME**	**SIZE**
	FR	16,683 SF	BLUEGRASS GRASS SEED	HYDROSE
	UP	8,924 SF	UPLAND NATIVE GRASS	HYDROSE

REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION	QTY	DETAIL
1	DUMOR 88-60 BENCH 88 WITH STEEL FRAME. RECYCLED PLASTIC. 72IN. LENGTH. FRAME: BLACK TEXTURED GLOSS SLATS: CEDAR RECYCLED PLASTIC OR EQUAL	4	
2	8' WIDE GRAVEL PATH		
3	8' WIDE ASPHALT PATH		
4	6' WIDE ASPHALT PATH		
5	PICNIC AREA		
6	POINT OF CONNECTION FOR THE SEPERATELY METERED IRRIGATION SYSTEM. PROVIDE DCVA PER CITY STANDARDS.		
7	WETLAND BOUNDARY, SEE MITIGATION PLAN FOR WETLAND PLANTINGS.		
8	50' WETLAND BUFFER BOUNDARY, SEE MITIGATION PLAN FOR WETLAND AND BUFFER PLANTINGS.		
9	SPLIT RAIL FENCE OR EQUAL AROUND THE WETLAND BUFFER WITH SIGNS EVERY 50'		

SYMBOL	DESCRIPTION
	8' ASPHALT PATH
	8' CRUSHED GRAVEL PATH
	SPLIT RAIL FENCE

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GRAPHIC SCALE
20 0 10 20 40
(IN FEET)
1 inch = 20 ft.

11/2/23

NO.	DATE	BY	REVISIONS
A	06/26/23	WCE	ORIGINAL PREPARATION

SCALE:
HORIZONTAL: 1" = 20'
VERTICAL: N/A

PROJ #: 21-3109
DATE: 11/02/23
DRAWN: SMM
REVIEWED:

- CIVIL
- STRUCTURAL
- SURVEYING
- TRAFFIC
- X PLANNING
- LANDSCAPE
- OTHER

WCE
WHIPPLE CONSULTING ENGINEERS
21 S PINES ROAD
SPOKANE VALLEY, WA 99206
PH: 509-893-2617 FAX: 509-926-0227

BEARD ADDITION
MITIGATION PLAN
CUMBERLAND LANE & 21ST AVENUE
SPOKANE, WA

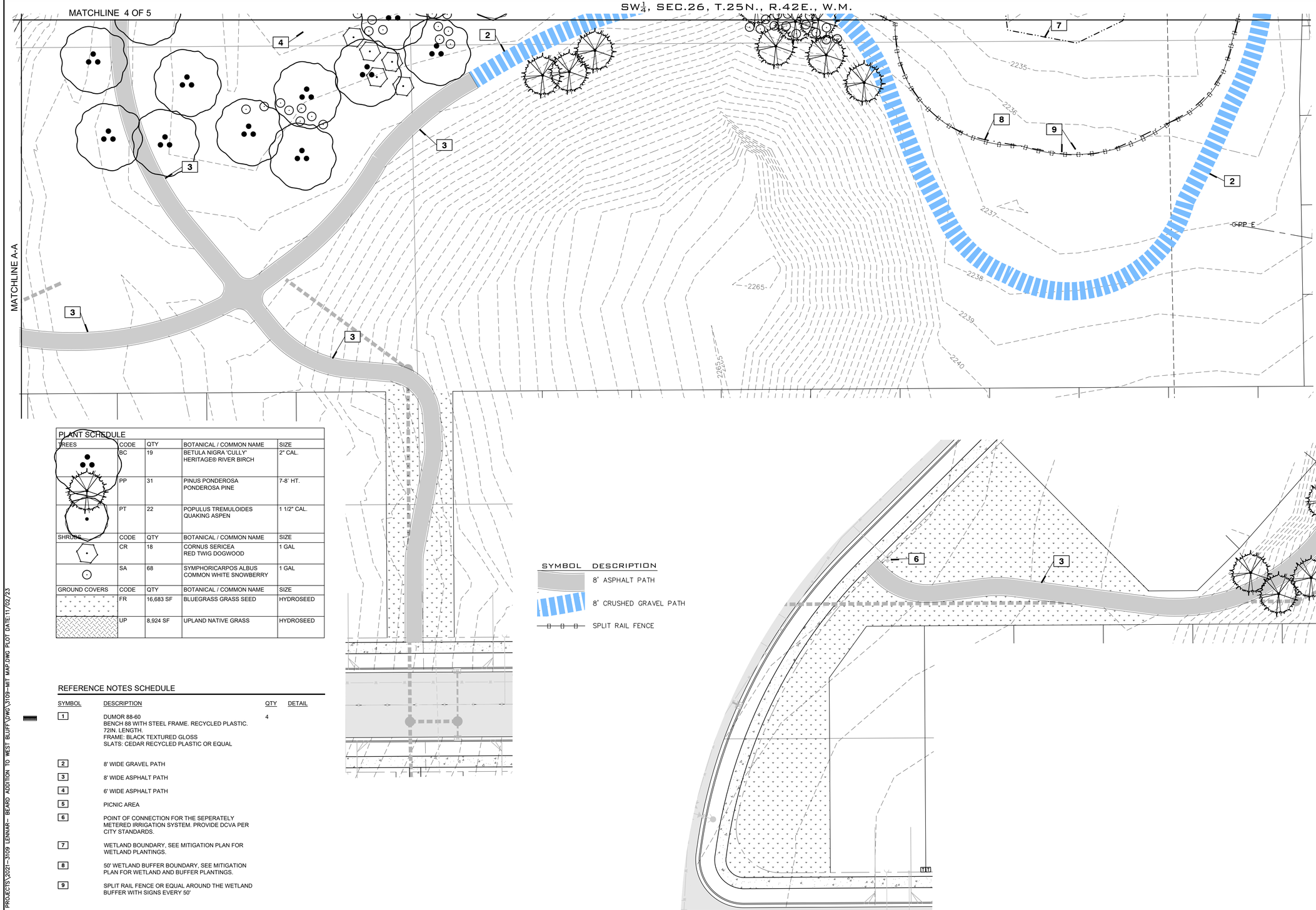
SHEET 4 OF 5
JOB NUMBER 21-3109

P:\WCE_WORK\2021 WCE PROJECTS\2021-3109 LENNAR- BEARD ADDITION TO WEST BLUFF\DWG\3109-MIT MAP.DWG PLOT DATE:11/02/23

MATCHLINE 4 OF 5

SW¼, SEC.26, T.25N., R.42E., W.M.

MATCHLINE A-A



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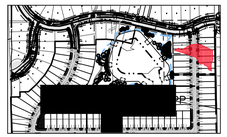

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5 OF 5

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