

RIPARIAN RESOURCE REPORT

PREPARED IN ACCORDANCE WITH THE CITY OF MISSOULA'S
SUBDIVISION DESIGN STANDARDS

for

ASPIRE SUBDIVISION

On a property located near 110 Somers St., Missoula, MT 59802
legally described as Parcel A of COS 6338, Tract 7 and 8 of COS 5298,
and Parcels 1, 2, 3, 4, and 5 of COS 6629

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Prepared For:
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INTRODUCTION

The Aspire Subdivision is located north of Interstate 90, centered between East Missoula and the Clark Fork River. The subdivision will include a mix of housing types constructed in 6 phases with a proposed character overlay. The proposed subdivision consists of 35.28 acres that has been primarily used for hay production and livestock grazing along with multiple single-family homes.

PURPOSE AND INTENT

Riparian resources provide protection from river channel changes, protection of riparian habitat and associated fish and wildlife, protection of water quality and quantity, flood control, bio-diversity forage, recreational uses, and a visually attractive environment. This Riparian Management plan is designed to meet the goals identified in Section 3-130 of the Missoula Subdivision Design Standards and preserve the riparian resource areas.

The extent of the riparian resource area is identified on the attached Riparian Resource Layout (Appendix A). The riparian resource area ranges from 2-25' wide and follows the full length of the Clark Fork on the eastern edge of the property, approximately 1,675 linear feet. The riparian areas are identified by distinct changes in vegetation and slope as shown on the attached site photos in Appendix B. The riparian areas begin where the pasture grasses fade and the shrubby riverbank vegetation begins.

The subdivision will not create any lots that are wholly or partially within the riparian resource area. Therefore, the project will not include development of any kind or removal of existing vegetation

withing the riparian resource area. The only exception is treatment of noxious weeds in accordance with the Weed Management Plan. The riparian resource area will be preserved through the dedication of open space an common space along the Clark Fork River.

VEGETAION

The approximate extent of riparian vegetation is shown on the Riparian Resource Layout in Appendix A. The riverbank provides a mix of Riparian Habitat Types. The riparian vegetation primarily consists of Deciduous Tree and Non-Willow Shrub Habitat Types. The Deciduous Tree Habitat Type identified is Black cottonwood/western snowberry. The Non-Willow Shrub Habitat species identified include Mountain alder, Sitka alder, and Western snowberry. A small pocket of Douglas Firs (Coniferous Tree Habitat Type) was identified at the northern end of the property. Lastly, there is an area with Sandbar willow (Willow Shrub Habitat Type) in the middle of the riparian area.

The riparian resource area will be protected by a buffer of varying width as shown on the Riparian Resource Layout. All lot lines are approximately 10ft away from the riparian buffer area. Between the Riparian Buffer and the lot lines will be a designated walking path. This path will provide an additional barrier from proposed residential lots. Additionally, the lots will have minimum rear building setback of 10ft, which provides additional buffer.

DRAINAGE

Runoff within the riparian area will drain to the Clark Fork River as it currently does. Drainage within the subdivision has been designed to prevent any discharges within the riparian resource area. The streets and interior lot runoff will be handled be infiltration in stormwater sumps. The drainage from the lots west of the walking path will be managed by a grassed swale on the uphill side of the walking path. This swale will capture sediment and infiltrate runoff to prevent erosion within the riparian resource area. The Grading and Drainage Report in Section N of the Aspire Subdivision Application included additional information on stormwater management.

RIPARIAN RESOURCE DESCRIPTION

As discussed above, the riparian vegetation primarily consists of Deciduous Tree and Non-willow Shrub Habitat Types with some Douglas Fir and Willows. The vegetation along the riverbank provides for the stabilization of the Clark Fork's bank. During higher flow times, the vegetation serves to slow the water down along the banks which minimizes erosion potential. During low flow periods, the vegetation promotes sediment deposition. This stabilization is expected to continue post-development as this area will remain undisturbed and no vegetation bank will be removed.

Compaction of soils within the riparian resource area poses a threat to the streambank protection that the plant communities provide by restricting the rooting depth of plants. The NRCS Soils Survey (See Section H of the Subdivision Application) classifies the soils on site as Alberton very fine sandy loam. Loamy soil complexes are more susceptible to compaction than sandy or clayey soils. Compaction of the riparian area will be minimized by having the walking path adjacent to the riparian area where foot traffic will be concentrated on the path rather than the riparian soils. Additionally, no work is proposed within the riparian area, so the existing soils and roots should remain undisturbed.

The riparian vegetation contributes to fish and wildlife habitat in the area. The primary species that use the area are whitetail deer, squirrels and other small mammals, and various bird species common to Missoula. The presence of elk or other big game species is possible, but not likely given the proximity to

existing urban development. Habitat within the riparian area will be maintained since the vegetation will remain undisturbed.

MITIGATION OF ADVERSE IMPACTS

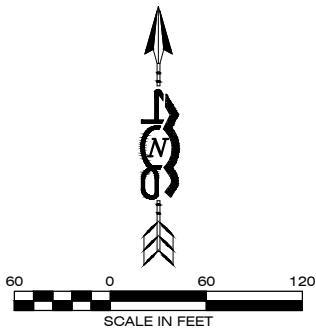
The riparian resource area will be protected and preserved by providing a buffer area from adjacent development and creation of a walking path to concentrate trips on a stabilized surface. The project will not require any vegetation removal within the riparian area ensuring that the streambank protection and erosion control functions of the vegetation will be maintained. The only potential vegetation removal is noxious weeds in accordance with the Weed Management Plan. The proposed trail and lots are outside of the buffer zone providing additional buffer distance from the proposed development. The proposed subdivision emphasizes maintaining the existing functions of the riparian area and serves to protect them into the future.

MAINTENANCE AND MONITORING

The open space and the riparian areas will be maintained by the City of Missoula Parks and Recreation Department and dedicated as Parkland area. Recommended Maintenance Activities include:

1. Inspection after Storm Event: Visually inspect the riparian area after major storm events to identify any damage or erosion problems.
2. Weed Control: Manage noxious weeds prior to their proliferation. This includes techniques such as mowing or herbicide use. Weed Control should follow the Weed Management Plan.
3. Revegetation: Bare soils should be reseeded or replanted with riparian community plants to reduce the spread of invasive weeds. Dead or eroded plants should be replaced with similar plants found within the riparian area.
4. Duration of Plan: The approved Riparian Resource Management Plan must be implemented in perpetuity and may not be altered without City Council approval. The Homeowners' Association and all owners are subject to and must abide by the approved Riparian Resource Plan.

Appendix A:
Riparian Resource Layout



LEGEND

- (E) EXISTING
(P) PROPOSED
- NATIONAL WETLAND DATABASE MAPPED WETLAND
- RIPARIAN RESOURCE AREA
- RIPARIAN BUFFER AREA
- TRAIL
- GRASSSED SWALE



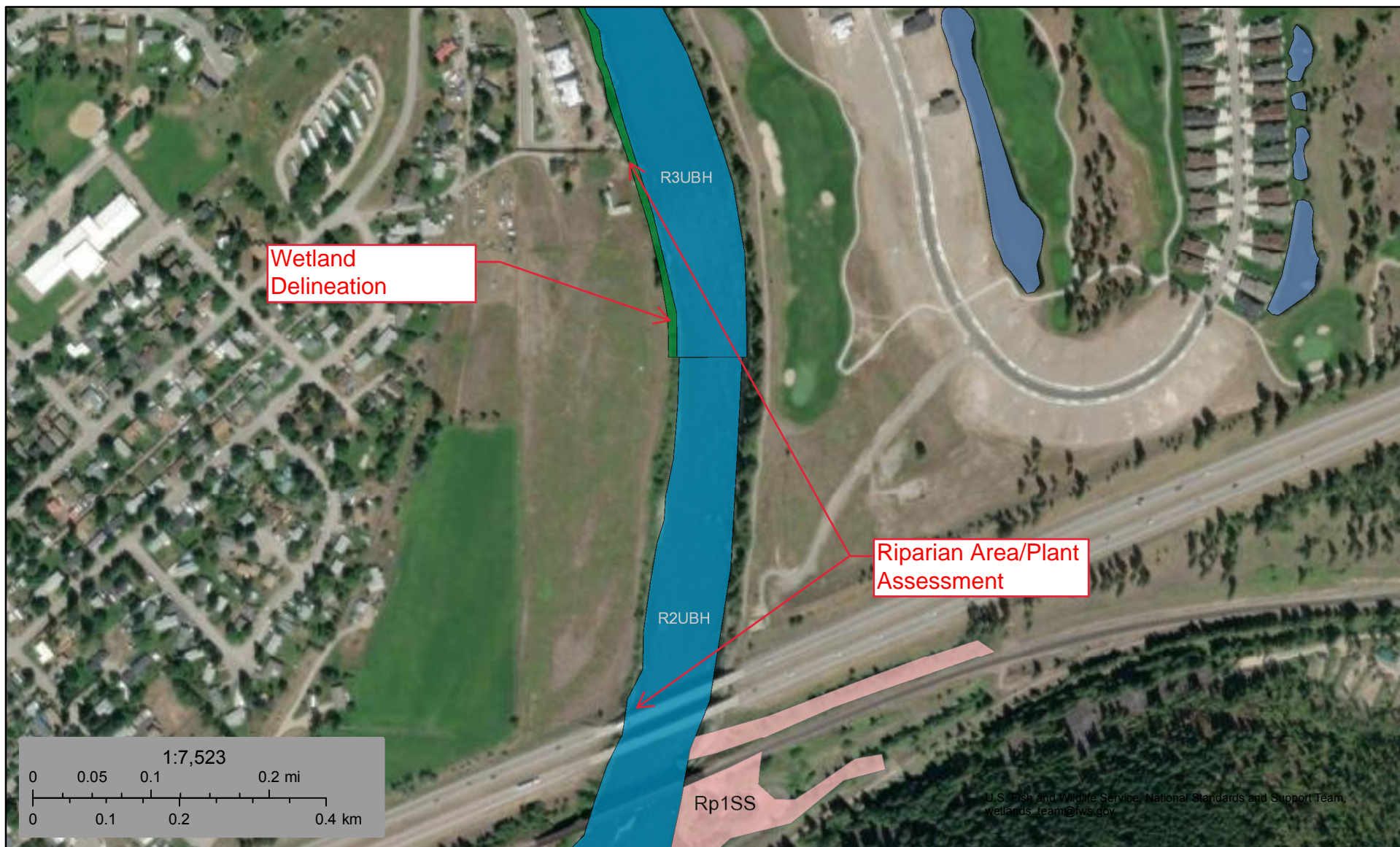
1 OF 1	SHEET: 406 PROJECT NO. 21-001	PROJECT NAME ASPIRE SUBDIVISION	LOCATION: PARCEL TRACTS 1-5 OF COS 6629 SEC. 24, T.13N, R.19W, P.M.M. MISSOULA COUNTY, MONTANA	REVISIONS DATE	DESIGNED: JZ CHECKED: - DATE: JUNE 2023	406 ENGINEERING CIVIL ENGINEERING LAND USE CONSULTING 1201 S. 6th St. W. Missoula, MT 59801 (406) 317-1131 35 8th St. E. Kalispell, MT 59901 (406) 257-0679 www.406engineeringinc.com	
		SHEET TITLE: RIPARIAN RESOURCE LAYOUT	PREPARED FOR: DENOVA HOMES				



U.S. Fish and Wildlife Service

National Wetlands Inventory

Sommers St.



June 22, 2023

Wetlands_Alaska

- 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.

Appendix B:

Site Photos



Photo 1: Looking North from South end of the Property. The Riparian Area is shown on the right of the photo and is distinct from the grass pasture that comprises most of the site.



Photo 2: Looking North. The Red line is the approximate edge of the Riparian Area. The Blue Lines depict the approximate location of the walking path, and the riparian buffer is between the red and blue lines.



Photo 3: Looking North from middle of Property. The Red line is the approximate edge of the Riparian Area. The Blue Lines depict the approximate location of the walking path, and the riparian buffer is between the red and blue lines.



Photo 4: Looking North from North end of Riparian Area. The Red line is the approximate edge of the Riparian Area. The Blue Lines depict the approximate location of the walking path, and the riparian buffer is between the red and blue lines.