

# Aldrich Residence

STORMWATER SITE PLAN  
PREPARED BY DWAYNE WALKER  
NOV 2025



6/Nov/2025

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**Applicant: James and Brooke Aldrich  
7448 W Mercer Way  
Mercer Island, Wa 98040**

### **Section 1 – Project Overview**

The Aldrich Residence project will construct a 560 square foot building addition and add a 316 square foot roof overhang to an existing patio located on King County Parcel #9266400040. The total parcel area is 15,195 square feet. Existing site conditions consist of an existing single family residence, concrete driveway, shed, with areas of lawn, landscape, and trees. Single family residences are located along the north, east, and west property lines and roadway access is located to the south. There are no known steep slopes, wetlands, or critical areas located on site. Existing and proposed surface coverage areas are as follows:

Description	Existing (sf)	Proposed (sf)
Building (with roof)	2,450	849
Driveway	1,151	0
Walkway	307	0
Patio	285	0
Shed	250	0
Total	4,443	849

### **Section 2 – Site Analysis**

Existing site conditions consist of an existing single family residence, concrete driveway, shed, with areas of lawn, landscape, and trees. Site topography generally slopes north between 2-15%. Soils are classified as Kitsap Silt Loam with a hydraulic soil group rating of C. Type C soils have a slow infiltration rate when thoroughly wet. These consist mainly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

#### Downstream analysis

Runoff from the site sheet flows to the northwesterly through lawn/driveway areas for approximately 500' to the stormwater conveyance system located in W Mercer Way. Runoff is likely collected by City of Mercer Island Catch Basin 32a-83 and directed north for 80 feet to catch basin 32a-84. Flows are then routed westerly for 1,140 feet to outfall to Lake Washington at City of Mercer Island Outfall

#### Upstream analysis

Upstream runoff consists of minor sheet flow runoff from southern single family residences and access drives. These flows are not anticipated to have any adverse impacts to this site.

### Section 3 – Minimum Requirements

The Aldrich Residence project will be subject to minimum requirements 1-5 of the 2019 Department of Ecology Stormwater Management Manual for Western Washington (SWMMWW). The following describes how the project will meet these Requirements:

MR #1 Stormwater Site Plan Report – Drainage plans and report will be submitted for this requirement.

MR #2 Construction Stormwater Pollution Prevention Plan (SWPPP) – A TESC plan has been provided with the project plans showing applicable BMPs.

MR #3 Source Control of Pollution – The project is a residential home and will not have any significant commercial or industrial pollution generating activities following construction.

MR #4 Preservation of Natural Drainage Systems and Outfalls – Runoff from this site will continue to flow in its natural direction

MR #5 On – Site Stormwater Management – BMPs from List 3 of the 2019 SWMMWW were evaluated and deemed feasible as follows:

#### Lawn/Landscaped Areas

BMP T5.13 was deemed feasible and will be applied to pervious areas that were disturbed during construction.

#### Roof Surfaces

BMP T5.10A: Downspout Full Infiltration was deemed infeasible due to concerns of low infiltration rates.

BMP T5.10B: **Downspout Dispersion Systems was deemed feasible.** The 2019 SWMMWW allows Downspout Dispersion Trenches or Downspout Splashblock Dispersion to meet the requirements of BMP T5.10B. For this project, Downspout Splash Block Dispersion was selected to meet the requirements of BMP T5.10B

#### Design Requirements

Item	Requirement	Provided
Flowpath	50' Min	50'
Slope	15% Max	12.4%
Area	700 sf each max	2 splash blocks 1400 total max.

See plan sheets for vegetated flow path vector analysis, horizontal control, and profiles

#### Other Hard Surfaces

Not applicable

## Explanation of Design Criteria #6 for Downspout Dispersion System Design

The City of Mercer Island operates under a stormwater discharge permit (called NPDES permit) from the Washington State Department of Ecology similar to other cities in Washington with populations greater than 10,000. The NPDES permit is authorized by the Federal Clean Water Act and implemented by the Washington State Department of Ecology (DOE). The NPDES permit requires cities and counties to adopt stormwater management control standards.

The City of Mercer Island municipal code 15.09.030 has adopted the 2019 Stormwater Management Manual for Western Washington (SWMMWW) to establish stormwater management control standards. This manual contains minimum requirements for stormwater management and establishes criteria to meet these minimum requirements as reviewed by City "Licensed Engineers".

As previously discussed, this project is subject to SWMMWW minimum requirements 1-5. The stormwater management manual provides clear and concise design criteria to consider stormwater impacts mitigated. The SWMMWW defines the term mitigated as follows:

Means, in the following order of preference:

- Avoiding the impact altogether by not taking a certain action or part of an action;
- 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;
- Rectifying the impact by repairing, rehabilitating or restoring the affected environment;
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and
- Compensating for the impact by replacing, enhancing, or providing substitute resources or environments.

As it pertains to the Aldrich Residence project, mitigation will be provided by downspout dispersion systems. Erosion or flooding of downstream properties will be prevented by following the SWMMWW criteria for downspout dispersion splash blocks as follows:

1. Maintain a vegetated flow path of at least 50 feet between the discharge point and any property line, structure, slope steeper than 15%, stream, wetland, lake, or other impervious surface. Sensitive area buffers may count toward flow path lengths.
2. A maximum of 700 square feet of roof area may drain to each splashblock.
3. Place a splashblock or a pad of crushed rock (2 feet wide by 3 feet long by 6 inches deep) at each downspout discharge point.

See plans sheets for additional information.

**ATTACHMENT A**  
**Soil Data**

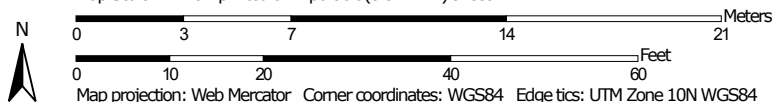
**ATTACHMENT B**  
**Site Photos**

Hydrologic Soil Group—King County Area, Washington




Soil Map may not be valid at this scale.

Map Scale: 1:246 if printed on A portrait (8.5" x 11") sheet.



## MAP LEGEND

### Area of Interest (AOI)









 Area of Interest (AOI)

### Soils

#### Soil Rating Polygons





 A  
 A/D  
 B  
 B/D  
 C  
 C/D  
 D  
 Not rated or not available

#### Soil Rating Lines


 A  
 A/D  
 B  
 B/D  
 C  
 C/D  
 D  
 Not rated or not available

#### Soil Rating Points






 A  
 A/D  
 B  
 B/D

 C  
 C/D  
 D  
 Not rated or not available

### 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: King County Area, Washington  
 Survey Area Data: Version 20, Aug 27, 2024

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

Date(s) aerial images were photographed: Jul 31, 2022—Aug 8, 2022

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.

## Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
KpD	Kitsap silt loam, 15 to 30 percent slopes	C	0.2	100.0%
<b>Totals for Area of Interest</b>			<b>0.2</b>	<b>100.0%</b>

### Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

### Rating Options

*Aggregation Method: Dominant Condition*

*Component Percent Cutoff: None Specified*

**ATTACHMENT B**  
**Site Photos**





**Description:** View looking north from the southern portion of the backyard. Trees 271 through 275, which are closest to the proposed building footprint, are shown here. The proposed addition is anticipated to remain outside of the Tree Protection Zones for these trees.

05/29/2025

**ATTACHMENT C**  
**Operations and Maintenance Instructions**

#### MAINTENANCE INSTRUCTIONS FOR BASIC DISPERSION

YOUR PROPERTY CONTAINS A STORMWATER MANAGEMENT FLOW CONTROL BMP (BEST MANAGEMENT PRACTICE) CALLED "BASIC DISPERSION," WHICH WAS INSTALLED TO MITIGATE THE STORMWATER QUANTITY AND QUALITY IMPACTS OF SOME OR ALL OF THE IMPERVIOUS SURFACES OR NON-NATIVE PERVIOUS SURFACES ON YOUR PROPERTY. BASIC DISPERSION IS A STRATEGY FOR UTILIZING ANY AVAILABLE CAPACITY OF ONSITE VEGETATED AREAS TO RETAIN, ABSORB, AND FILTER THE RUNOFF FROM DEVELOPED SURFACES. THIS FLOW CONTROL BMP HAS TWO PRIMARY COMPONENTS THAT MUST BE MAINTAINED: (1) THE DEVICES THAT DISPERSE RUNOFF FROM THE DEVELOPED SURFACES AND (2) THE VEGETATED AREA OVER WHICH RUNOFF IS DISPERSED.

#### DISPERSION DEVICES

THE DISPERSION DEVICES USED ON YOUR PROPERTY INCLUDE SPLASH BLOCK. THE SIZE, PLACEMENT, COMPOSITION, AND DOWNSTREAM FLOWPATHS OF THESE DEVICES AS DEPICTED BY THE FLOW CONTROL BMP SITE PLAN AND DESIGN DETAILS MUST BE MAINTAINED AND MAY NOT BE CHANGED WITHOUT WRITTEN APPROVAL FROM THE CITY OF MERCER ISLAND OR THROUGH A FUTURE DEVELOPMENT PERMIT FROM THE CITY OF MERCER ISLAND. DISPERSION DEVICES MUST BE INSPECTED ANNUALLY AND AFTER MAJOR STORM EVENTS TO IDENTIFY AND REPAIR ANY PHYSICAL DEFECTS. WHEN NATIVE SOIL IS EXPOSED OR EROSION CHANNELS ARE PRESENT, THE SOURCES OF THE EROSION OR CONCENTRATED FLOW NEED TO BE IDENTIFIED AND MITIGATED. CONCENTRATED FLOW CAN BE MITIGATED BY LEVELING THE EDGE OF THE PERVIOUS AREA AND/OR REALIGNING OR REPLENISHING THE ROCKS IN THE DISPERSION DEVICE, SUCH AS IN ROCK PADS AND GRAVEL FILLED TRENCHES.

#### VEGETATED FLOWPATHS

THE VEGETATED AREA OVER WHICH RUNOFF IS DISPERSED MUST BE MAINTAINED IN GOOD CONDITION FREE OF BARE SPOTS AND OBSTRUCTIONS THAT WOULD CONCENTRATE FLOWS.