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ENGINEERS-SURVEYORS

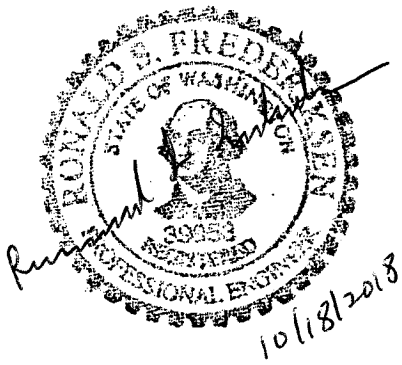
TECHNICAL INFORMATION REPORT

FOR

6059 77th Ave SE

Eastside Consultants, Inc. File No. 17090

October 18, 2018



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PROJECT SITE DESCRIPTION

The project consists of removing 743 sf of garage, a 1,422 sf driveway, and 2,039 sf of pavement for a total of 3,454 sf of existng impervious and replacing it with 1,289 sf of garage and 1,049 sf of driveway. This results in a net decrease of 1,866 sf of impervious for a total of 7,798 sf of impervious.

The project parcel is located on the western side of Mercer Island and will be directly discharging stormwater runoff through the existing bulkhead into Lake Washington.

The physical location of the site is 6059 77th Ave SE in Mercer Island, WA. There is single family residences to the north and south. 77th Ave SE borders the site to the east and Lake Washington borders the site to the west.

The runoff will primarily sheetflow off the roof into gutters and be transported via downspouts to a tighline to Lake Washington. The proposed driveway will be conveyed to a catch basin and tighlined to the outfall.

HYDROLOGIC CONDITIONS

A. Existing Runoff Conditions

The project consists of removing 743 sf of garage, a 1,422 sf driveway, and 2,039 sf of pavement for a total of 3,454 sf removed and 5,460 to remain. The exisitng impervious of 9,964 sf covers 53.43 percent of the site. Based on the City of Mercer Island Code, the existing runoff conditions were analyzed per the 1992 DOE Manual.

B. Proposed Runoff Conditions

The proposed development includes keeping a new 1,289 sf garage addition, and 1,049 sf of driveway for a total of 2,338 sf of new or replaced impervious and therefore 7,798 sf of total impervious. The area being analyzed consists of 18,650 sf (0.428 acres). The proposed site conditions consist of 7,798 sf of total impervious surface and therefore covers 41.81% of the site. This results in a net decrease of 1,866 sf of impervious surface. The drainage patterns for the proposed development will be to pick-up the roof in gutters and downspouts and discharge it directly to Lake Washington. The driveway will be picked up in a catch basin and directly discharge into Lake Washington.

OFF-SITE ANALYSIS

The site discharges directly to Lake Washington.

ADHERENCE TO 2014 STORMWATER MANAGEMENT MANUAL FOR WESTERN WASHINGTON MINIMUM TECHNICAL REQUIREMENTS 1-9

1. Minimum Requirement #1: Preparation of Stormwater Site Plans

A set of civil plans have been prepared and included with this submittal.

2. Minimum Requirement #2: Construction Stormwater Pollution Prevention

All exposed soils shall be either hydroseeded, sodded, mulched, covered with a plastic coating, or application of ground base on areas to be paved within the following time periods listed below. From October 1 through April 30, no soils shall remain exposed for more than 2 days. From May 1 through September 30, no soils shall remain exposed for more than 7 days.

Bmp's shall be siutable for the appropriate time of year construction takes place. These shall include but not limited to silt fence, catchbasin inserts, strawbale and rock checkdams, nad interceptor trenches.

Permanent catch basins used during the construction phase of the project will be protected using filter fabric barriers under the grate. These will be routinely replaced to prevent plugging.

All underground utility construction guidelines will be complied with according to erosion and sediment control requirement # 9.

A construction entrance will be established using quarry spalls. All temporary BMPs will be removed within 30 days after final site stabilization is complete.

All dewatering onsite will be detained in a temporary detention pond before entering any pipe.

All temporary and permanent control measures will be properly maintained and repaired as needed to assure proper performance measures. The contractor shall be bonded to assure compliance with the sediment and control plan.

Thirteen Elements of Construction Stormwater Pollution Prevention

1) Preserve Vegetation/Mark Clearing Limits: Clearing Limits will be delineated with Survey Ribbons in the files and if necessary stakes or fencing.
2) Establish Construction Access: A Construction Entrance will be added if deemed necessary
3) Control Flow Rates: Since the site is on Lake Washington flow rates do not need to be controlled
4) Install Sediment Controls: Silt fence will be established on all downgradient slopes.
5) Stabilize Soils: The soils will be stabilized with Silt fence, Mulching, temporary seeding, and plastic covering if necessary
6) Protect Slopes: Slopes will be protected with Jute Matting, mulching, temporary seeding, and plastic covering if necessary.

7) Protect Drain Inlets: Storm Drain Inlet protection on upstream and downstream catchbasins. There are none present.
8) Stabilize Channels and outlets: The outlet will be stabilized with rip rap as needed.
9) Control Pollutants: Pollutants will be controlled via BMPs and a downturned elbow will be installed on the catchbasin in the driveway
10) Control Dewatering: If necessary, it will be collected and pumped to Baker Tanks until the foundation is poured footing drains installed
11) Maintain Bmps: All Bmp's will inspected daily and maintained as needed. All temporary measures will be removed within 30 days.
12) Manage the Project: The project will be Managed be the CECSL (to be determined)

13) Protect Low Impact Development BMPs: No BMPs are implemented on the project

3. Minimum Requirement #3: Source Control of Pollution

The main source of pollution in this project will be automobile oils and grease. We will instsall a downturned elbow in the driveway catchbasin control any oils, etc. from entering the Lake

4. Minimum Requirement #4: Preservation of Natural Drainage Systems and Outfalls

Drainage from the proposed site will dischrge directly into Lake Washington. The proposed driveway will be directly discharged to Lake Washington since it is less than 5,000 sf. The stormwater is discharged in the natural downstream direction which enters Lake Washington.

5. Minimum Requirement #5: On-site Stormwater Management

Minimum Requirements 1-5

Since the existing impervious surface covers only 53.43 percent of the site, and we will be adding only 2,338 sf of new plus replaced impervious, based on the included Figure 2.4.2 Flow Chart, we need to apply Minimum Requirements 1-5

Per figure I-2.5.1 of the 2014 DOE SMMWW BMP T5.13: Post-Construction Soil Quality and Depth will be applied.

Lawn and Landscape Areas:

1) We will be applying Post-Construction Soil Quality and Depth per BMP T5.13

Roofs:

Using List #1 from Section 2.5.5

1) Full Dispersion is infeasible due to an inadequate flow path.

Full Infiltration is infeasible due to poor soils per the Geotech Report (very silty sand)

2) Rain Gardens are infeasible due to the poor soils. There is one provided for water quality purposes only for mitigation of the Critical Areas. The Sizing is included by Watershed Company.
3) Downspout Dispersion is infeasible due to not having 50 feet of flowpath
4) We will be using a Perforated Stub-out connection per BMP T5.10C, but runoff is going directly to Lake Washington

Other Hard Surfaces

For all other impervious areas, Using List #2 from Section D1-04.2(e):

1) Full Dispersion is infeasible due to an inadequate flow path.
   Full Infiltration is infeasible due to poor soils per the Geotech Report (very silty sand)
2) Permeable Pavement is infeasible due to the poor very silty sand soils
3) Bioretention is infeasible due to the poor very silty soils.
4) Sheet Flow Dispersion is not feasible as we do not have the minimum flowpath required and are discharging directly to Lake Washington

6. Minimum Requirement #6: Runoff Treatment

Not Applicable

7. Minimum Requirement #7: Flow Control

Not Applicable

8. Minimum Requirement #8: Wetlands Protection

Not Applicable

9. Minimum Requirement #9: Operation and Maintenance

Annual maintenance shall be performed on the catch basin.

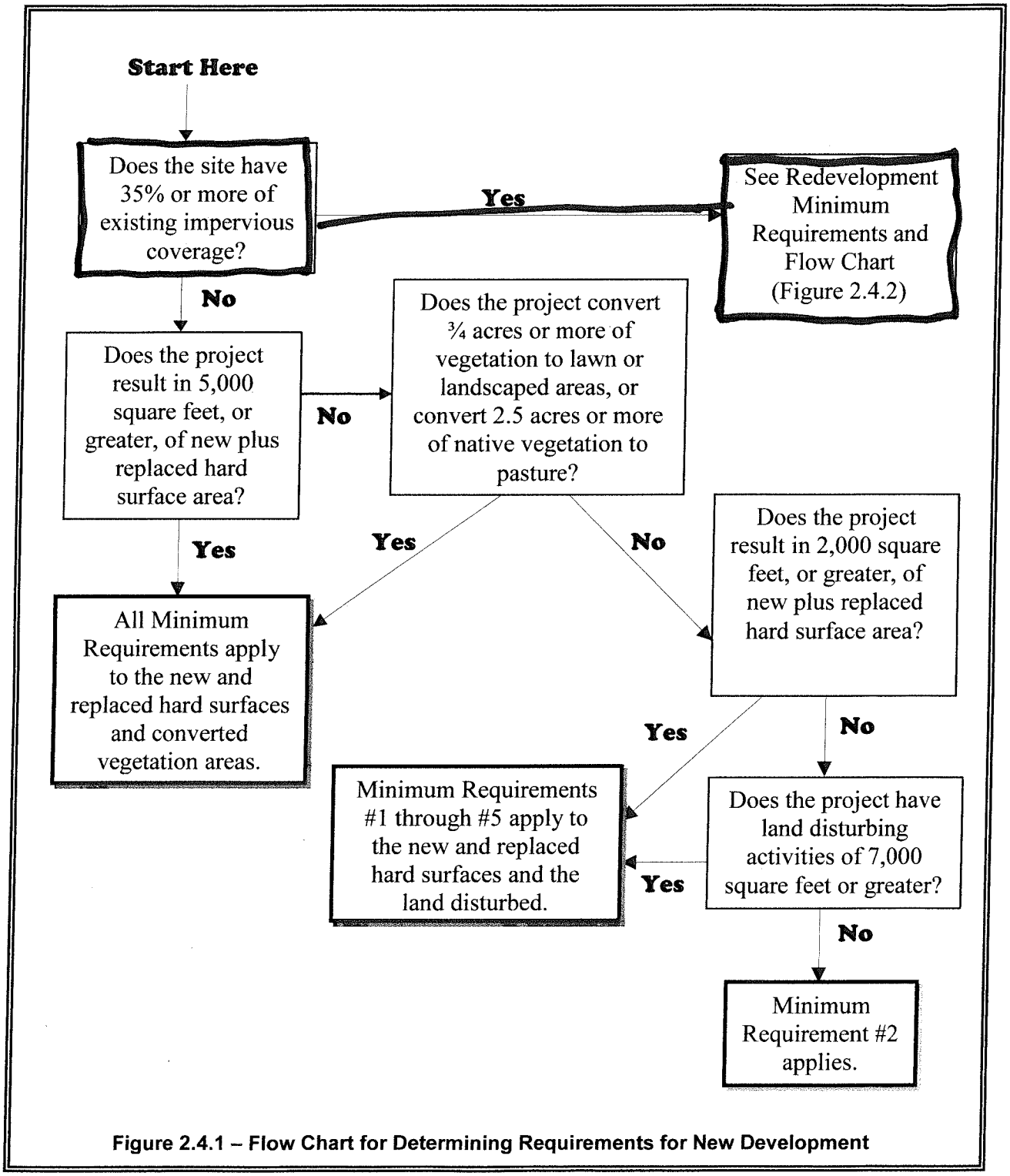

Figure 2.4.1 – Flow Chart for Determining Requirements for New Development

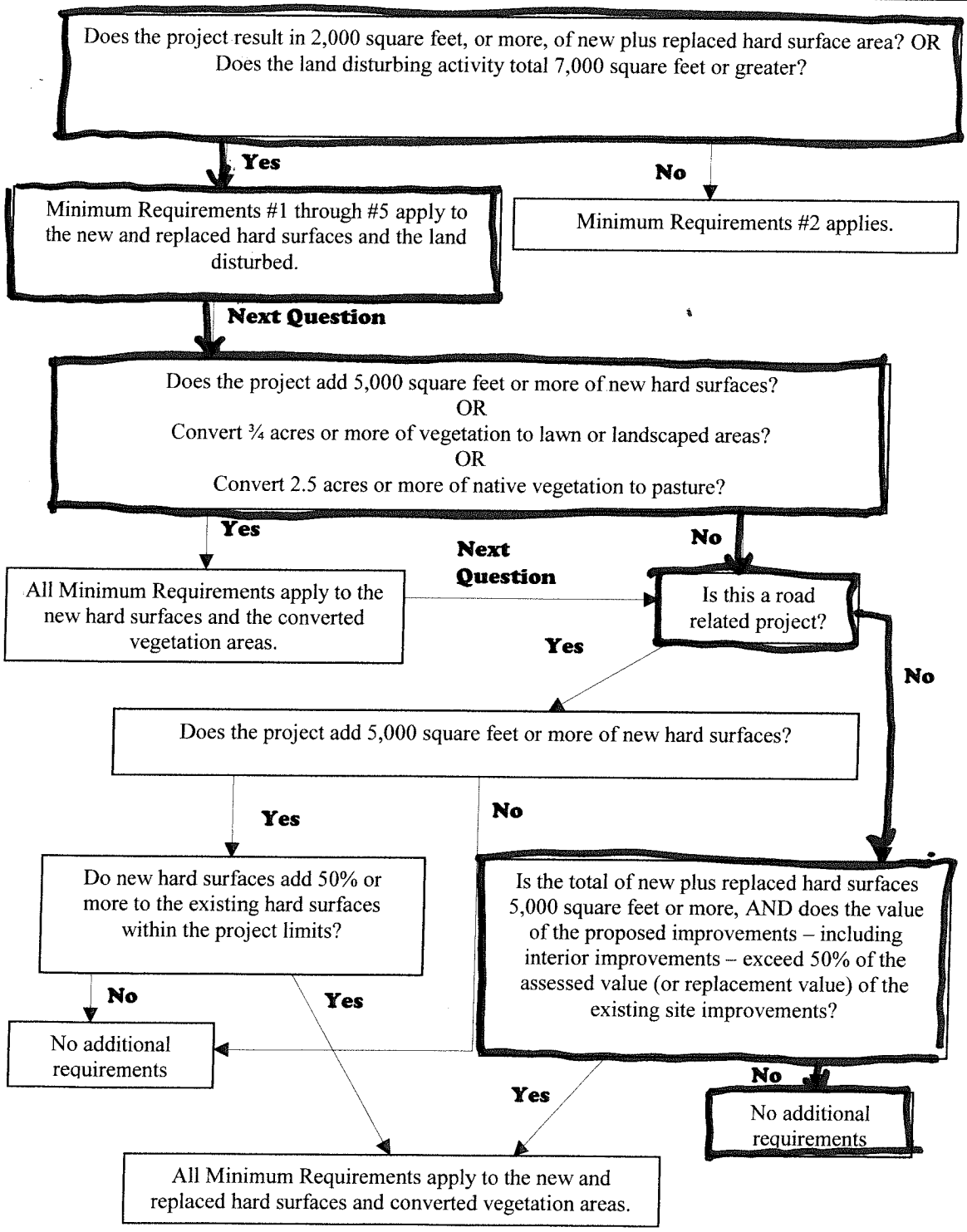

Figure 2.4.2 – Flow Chart for Determining Requirements for Redevelopment