



Stormwater Development Guidelines

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In the City of Mountlake Terrace, low impact development (LID) best management practices (BMPs) are preferred. Conventional stormwater management systems rely on detention structures and closed conveyance systems. Low impact development (LID) refers to systems and practices that use or mimic natural processes, resulting in the infiltration, evapotranspiration or use of stormwater in order to protect water quality and associated aquatic habitat.

This guidance document is designed to help you meet state requirements and city code, protect downstream properties from flooding, and preserve clean water in local creeks, Lake Ballinger, and Lake Washington. Please determine which LID stormwater BMPs are feasible for your project, and incorporate them into your design.

1. **Review and determine which minimum stormwater requirements apply.** The minimum stormwater requirements are dependent on the amount of new or replaced impervious surface and/or land disturbance created by your project. To make this determination, use the New Development or Redevelopment requirement flow charts (whichever is more applicable to your site) at the end of this document.
2. **Prepare and submit requirements as needed.** The stage in the review process for when to submit the information on each minimum requirement is shown in *italics*.

Minimum Requirement #1 (*Required at MLT land use review*) Preparation of a Stormwater Drainage Report (aka Stormwater Site Plan.)

1. Executive summary: Please provide square footage for roofs, driveways, roads, and other hard surfaces, as well as pervious surface square footage. Include area of impervious pollution-generating surfaces (these will primarily be anywhere a car can drive outside), non-pollution-generating hard surfaces (most roofs, sidewalks), and pollution-generating pervious surfaces (lawns/landscaped areas, permeable pavement, sports fields).
2. Your permanent stormwater control plan for the site (a short narrative).
3. Calculations for any permanent stormwater facilities to demonstrate capability to store required volume (if flow control is required).
4. LID BMPs and Infiltration Testing Documentation. This is an MLT-specific form, which documents how the project meets the requirements of on-site stormwater management (Minimum Requirement #5). If a BMP from the list is determined to be infeasible, please describe the conditions on your site that meet specific infeasibility criteria from the manual, and cite the section of the manual.
5. Survey prepared by a registered land surveyor, civil engineer, or other qualified professional.
6. Soils report by a professional soil scientist certified by the Soil Science Society of America (or equivalent national program) or by other suitably trained persons working under the supervision of a

professional engineer, geologist, hydrogeologist, or engineering geologist registered in the State of Washington.¹ Soils report shall identify:

- a. Underlying soils (soil surveys, soil test pits, soil borings, or soil grain analyses)²
 - b. Results of infiltration testing with small-scale or large-scale Pilot Infiltration Test (PIT). Instructions are available in [Ecology's 2019 Stormwater Manual](#). Grain size analysis may substitute for infiltration tests ONLY on sites with soils unconsolidated by glacial advance. Infiltration testing is not required if other infeasibility criteria, such as contaminated soils, high groundwater, or steep slopes, make infiltration BMPs infeasible. Thoroughly document which infeasibility criteria apply to your site if infiltration testing is not proposed.
 - c. Results of testing for a hydraulic restriction layer (groundwater close to surface, soil with infiltration rate of less than 0.3 in/hr, bedrock, etc.)
7. Survey of existing vegetation by a qualified individual (on project site AND for off-site significant trees with driplines inside project limits).
8. Preliminary development layout, considering:
- a. Minimization of land disturbance and impervious areas
 - b. Protection of critical areas
 - c. Preservation of natural vegetation
 - d. Location of impervious areas over less permeable soil
 - e. Building clustering
 - f. Preserving natural drainage patterns
9. If site adds 5,000 ft² of new hard surface, an off-site analysis is required. Describe potential flow impacts downstream of the project to receiving water body or ¼ mile (whichever is less).
10. Maps prepared as part of the Stormwater Drainage Report must include:
- a. Existing public and private development including utility infrastructure on or adjacent to the site (check: <https://www.cityofmlt.com/181/Maps-Planning-and-Engineering>.)
 - b. Minor and major hydrologic features (seeps, springs, closed depressions, swales, streams, wetlands, critical area buffers)
 - c. Flood hazard areas on or adjacent to site
 - d. Geologic hazard areas and associated buffers
 - e. Aquifer and wellhead protection areas, if present
 - f. Topographic information (>10% slope, 2 ft. contours); 10%-20%, (5 ft. contours, >20%, 10 ft. contours.) Elevations at 25 ft. intervals.

Minimum Requirement #2 (*Required at MLT civil plan review*) Construction Stormwater Pollution Prevention Plan (SWPPP). Prepare a SWPPP in the form of a narrative report to address all 13 elements for protection of stormwater during construction, using the [Ecology CSWGP-SWPPP template](#). Waiver of the use of the Ecology SWPPP template for small sites with simple pollution prevention requirements (example: single-family homes) may be granted by the MLT stormwater program manager upon request. The 13 elements which will need to be addressed are: preserve vegetation/mark clearing limits; establish construction access; control flow rates; install sediment controls; stabilize soils; protect slopes;

¹ If the project is required to meet minimum requirements 1-5 only, the soils report may be prepared by a locally licensed on-site sewage designer.

² If the project is required to meet minimum requirements 1-9, the soils report must also include detailed logs (depth of pit or boring, soil descriptions, depth to water if present, and presence of stratification.) Soil stratigraphy must be assessed for low and high permeability layers. Soil characterization for each soil unit must include: grain size, textural class, % clay content, % organic content, cation exchange capacity, color/mottling, and variations/nature of stratifications.

protect drain inlets; stabilize channels and outlets; control pollutants; control dewatering; maintain erosion control BMPs; manage the project; and protect low impact development BMPs.

Minimum Requirement #3 *(Required at MLT civil plan review)* Source Control of Pollution. Describe all known, available, and reasonable operational and structural source control best management practices (BMPs) to be used on site when the project is completed.

Minimum Requirement #4 *(Required at MLT land use review)* Preservation of Natural Drainage Systems and Outfalls. Describe how the project will maintain existing natural stormwater drainage and outfalls. If a new outfall to the stormwater system is required by the project, describe how the project will protect downstream properties from impacts as per page 115 of the [2019 Ecology Stormwater Manual](#).

Minimum Requirement #5 *(Required at MLT land use review)* On-site Stormwater Management. Projects may use the LID BMPs from List #1 or List #2 below for all surface types below, OR use any Flow Control BMP desired to achieve the LID Performance Standard³ and apply BMP T5.13: Post-Construction Soil Quality and Depth. For each surface, consider the BMPs in the order listed for that type of surface. Use the first BMP that is considered feasible. No other on-site stormwater management BMP is necessary for that surface.

List #1 (for projects triggering Minimum Requirements #1-#5)	List #2 (for projects triggering Minimum Requirements #1-#9)
Lawn and Landscaped Areas	
BMP T5.13: Post-Construction Soil Quality and Depth	BMP T5.13: Post-Construction Soil Quality and Depth
Roofs	
1. BMP T5.30: Full Dispersion, or BMP T5.10A: Downspout Full Infiltration	1. BMP T5.30: Full Dispersion, or BMP T5.10A: Downspout Full Infiltration
2. BMP T5.14: Rain Gardens, or BMP T7.30: Bioretention	2. BMP T7.30: Bioretention
3. BMP T5.10B: Downspout Dispersion Systems	3. BMP T5.10B: Downspout Dispersion Systems
Other Hard Surfaces	
1. BMP T5.30: Full Dispersion	1. BMP T5.30: Full Dispersion
2. BMP T5.15: Permeable Pavements, or BMP T5.14: Rain Gardens, or BMP T7.30: Bioretention	2. BMP T5.15: Permeable Pavements
3. BMP T5.12: Sheet Flow Dispersion, or BMP T5.11: Concentrated Flow Dispersion	3. BMP T7.30: Bioretention
	4. BMP T5.12: Sheet Flow Dispersion, or BMP T5.11: Concentrated Flow Dispersion
Notes for using the List Approach:	
1. BMP T5.14: Rain Gardens and BMP T7.30: Bioretention used in the List Approach must be sized to have a minimum horizontal projected surface area below the overflow of at least 5% of the area it drains.	
2. BMP T5.15: Permeable Pavements in the List Approach is not a requirement to pave these surfaces. Where pavement is proposed, it must be permeable to the extent feasible unless BMP T5.30: Full Dispersion is employed.	

³ LID Performance Standard: stormwater discharges shall match developed discharge durations to pre-developed durations for the range of pre-developed discharge rates from 8% of the 2-year peak flow to 50% of the 2-year peak flow.

Minimum Requirement #6 (*Required at MLT land use review*) Runoff Treatment. If your site has more than 5,000 square feet of pollution-generating hard surface, determine appropriate runoff treatment and show the location on the plans.

Minimum Requirement #7 (*Required at MLT land use review*) Flow Control. If the following conditions apply to your site, then determine flow control needs and show appropriate flow control on plans.

- Has more than 10,000 square feet of effective impervious surface; or
- Converts $\frac{3}{4}$ acres or more of vegetation to lawn or landscape; or
- Converts 2.5 acres or more of native vegetation to pasture in a threshold discharge area; or
- Through a combination of effective hard surfaces and converted vegetation areas causes a 0.10 cubic feet per second increase in the 100-year flow frequency from a threshold discharge area. Must be estimated using the Western Washington Hydrology Model or other approved model and 1 hour time steps (or a 0.15 cfs increase using 15-minute time steps.)⁴

Use of tree retention/planting, permeable pavement, or other BMPs may allow developers to reduce the size and cost of required flow control facilities. Please consult the [2019 Ecology Stormwater Manual](#) or contact Laura Reed, Stormwater Program Manager, at lreed@mltwa.gov or 425-744-6226 to discuss options.

Minimum Requirement #8 (*Required at MLT land use review*) Wetlands Protection. If your site discharges stormwater to wetlands directly or indirectly via a conveyance system, special conditions apply. Describe how these conditions will be met, using the guidance on wetlands from the [2019 Ecology Stormwater Manual](#).

Minimum Requirement #9 (*Required at MLT civil plan review*) Operation and Maintenance. Develop an O&M manual for all proposed stormwater facilities on your site.

Other requirements:

Right of entry authorization (*required on final plat/binding site plans*)

Specify which stormwater facilities are present on site, and include a statement that responsibility for maintenance of the stormwater facility rests with the property owners or the homeowner association. Add right of entry for city staff for the purpose of inspection, auditing, maintenance, or repair of storm drainage facilities (emergency and non-emergency.) In the event of failure to repair or maintain storm drainage facilities within a reasonable time period, include the city's right to repair or maintain storm drainage facilities at the expense of the owners or homeowner association.

Application for coverage under Ecology's Construction Stormwater General Permit Construction site operators are required to apply for and be covered by this permit **if both** of these conditions apply:

- a. Your construction project disturbs land⁵ through clearing, grading, excavating, or stockpiling of fill material.

⁴ The 0.10 cfs (1-hour time steps) or 0.15 cfs (15-minute time steps) increase should be a comparison of the post-project runoff to the existing condition runoff. For the purpose of applying this threshold, the existing condition is either the pre-project land cover, or the land cover that existed at the site as of a date when the local jurisdiction first adopted flow control requirements into code or rules.

⁵ Count the cumulative acreage of the whole project, whether single or multi-phase. Include off-site disturbance acreage from support activities related to the construction site. This applies if your project is a portion (less than 1 acre) of a larger project planned over time.

- Sites that disturb one acre or more.
 - Sites that are smaller than one acre that are part of a larger common plan of development – which will ultimately disturb one acre or more and discharge stormwater to surface waters – must apply for a permit.
 - Sites of any size discharging polluted stormwater to waters of the state.
 - Sites of any size that can be reasonably expected to cause a violation of any water quality standard.
- b. There is any possibility that during construction, stormwater could run off your site or enter a conveyance system that leads to surface waters. In almost every case it does. If the location of your site poses no possibility that rainfall or snowmelt could leave the site or enter a waterway, you do not need a permit.

MTMC 13.05.340 Stormwater capital facilities charge

Stormwater capital facilities charges shall be imposed on all new development. The equivalent residential unit (ERU) for stormwater (equal to 2,282 square feet of impervious surface in the City of Mountlake Terrace) shall be the unit for capital facilities charges. The charge for stormwater capital facilities shall be \$3,003/per ERU.

A. Single-Family Residential. Each single-family residential lot will be assessed a capital facilities charge equal to \$3,003 (equal to one ERU.) The charge will be due when a lot is developed or redeveloped and new water and/or new sanitary sewer service is initiated for the parcel.

B. Multifamily, Industrial and Commercial. The total stormwater capital facility charge for a parcel will equal: Total impervious surface/2,282 x \$3,003. The charge will be due upon construction permit issuance for the parcel.

Definitions

Redevelopment: Construction activity on a site that is already substantially developed (has 35% or more existing hard surface coverage).

Hard surface: An impervious surface, a permeable pavement, or a vegetated roof.

Impervious surface: A non-vegetated surface area that causes water to run off the surface in greater quantities or at an increased rate of flow from the flow present under natural conditions before development. A non-vegetated surface area that prevents the entry of water into the soil. Common impervious surfaces include, but are not limited to, rooftops, walkways, patios, driveways, parking lots or storage areas, concrete or asphalt paving, gravel roads, packed earthen materials, or other surfaces, which similarly impede the natural infiltration of stormwater.

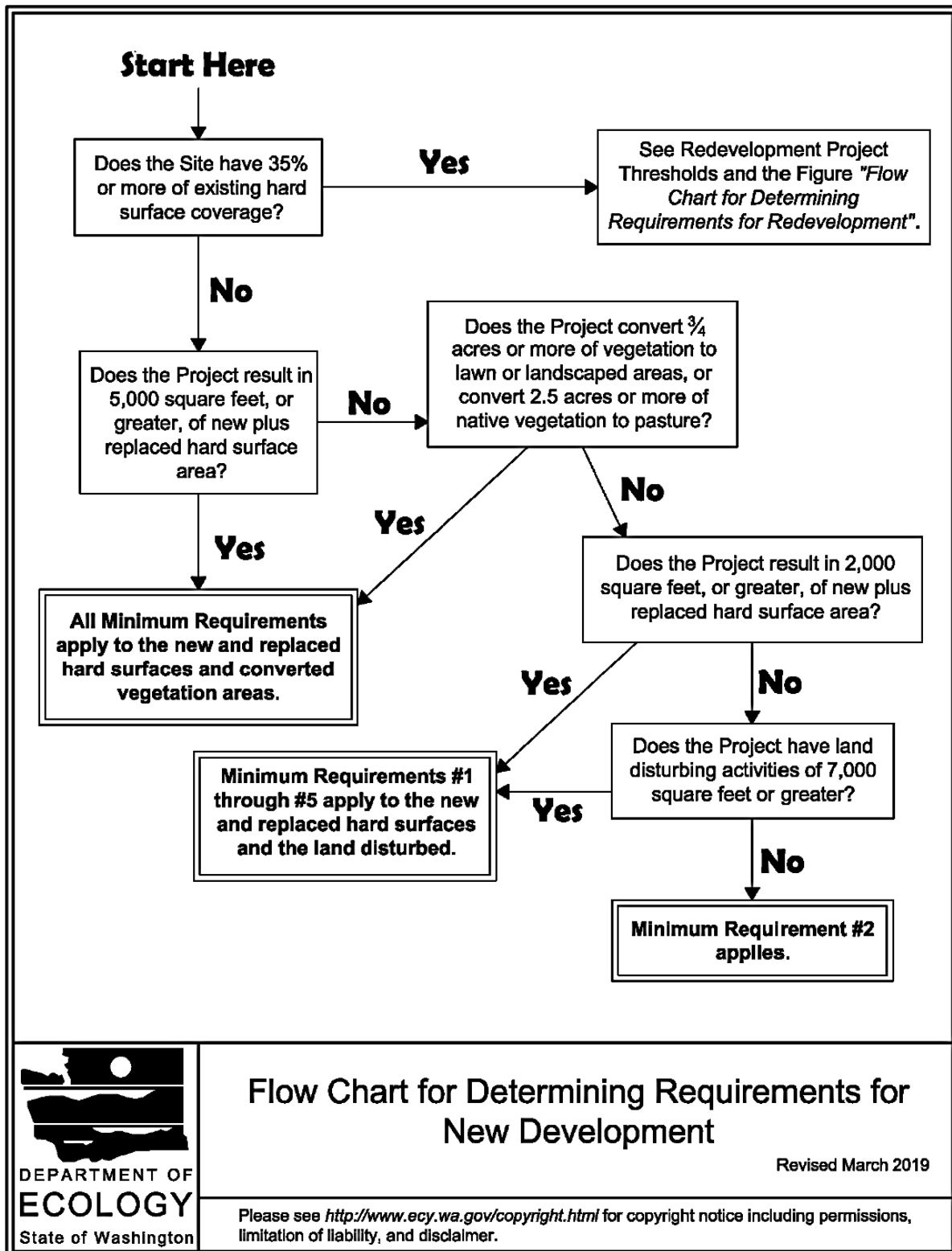
Land disturbing activity: Any activity that results in a change in the existing soil cover (both vegetative and non-vegetative) and/or the existing soil topography. Land disturbing activities include (but are not limited to) compaction, clearing, grading, filling, and excavation. Vegetation maintenance practices, including landscaping and gardening, are not considered land disturbing activity.

For more information, please contact:

Laura Reed
Stormwater Program Manager
City of Mountlake Terrace
Email: lreed@mltwa.gov
Phone: 425-744-6226

For more information about any of the stormwater minimum requirements or other stormwater technical requirements, please consult the city's adopted stormwater management manual, [Ecology's 2019 Stormwater Management Manual for Western Washington](#).

Figure I-3.1: Flow Chart for Determining Requirements for New Development

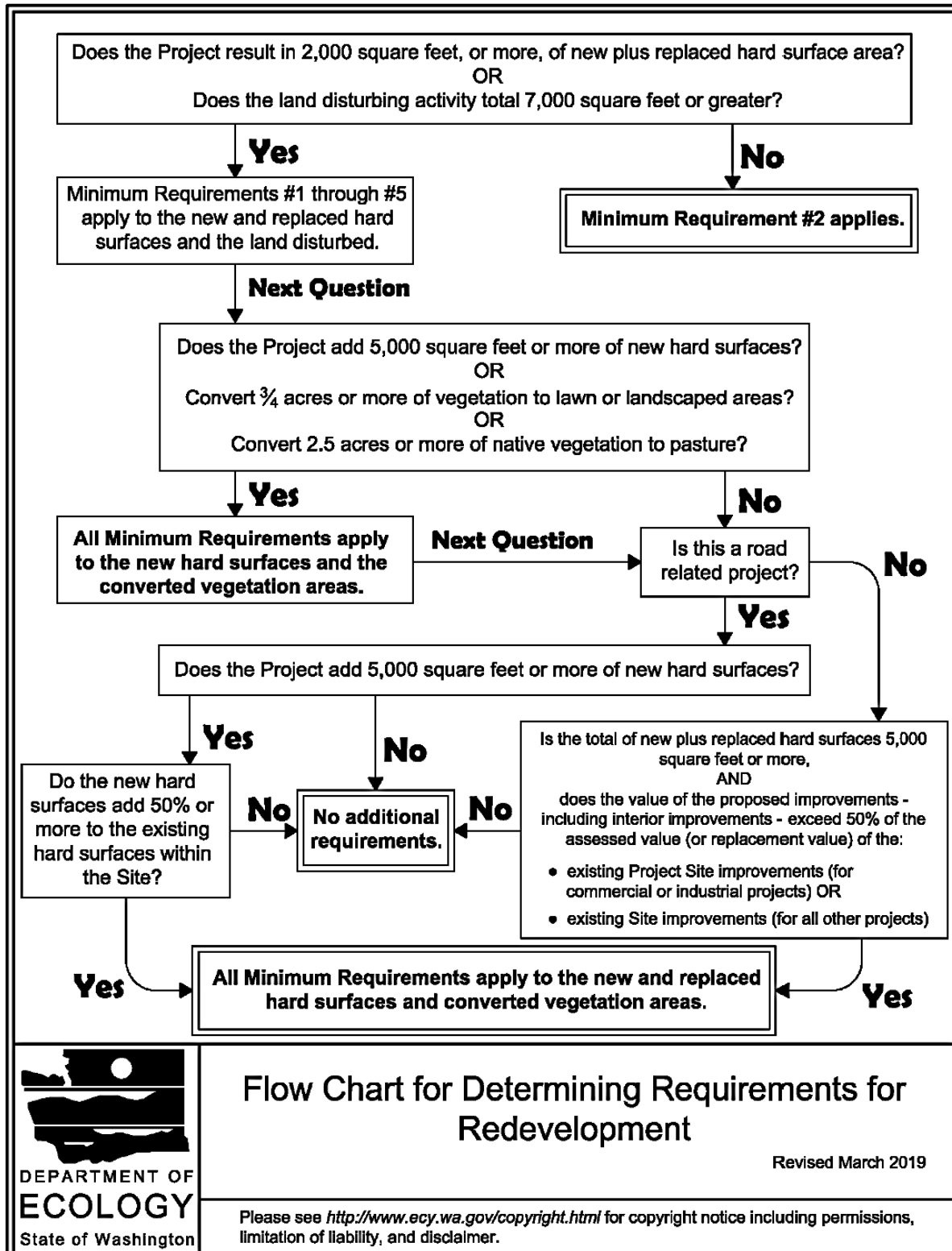


Flow Chart for Determining Requirements for New Development

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Figure I-3.2: Flow Chart for Determining Requirements for Redevelopment



Flow Chart for Determining Requirements for Redevelopment

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