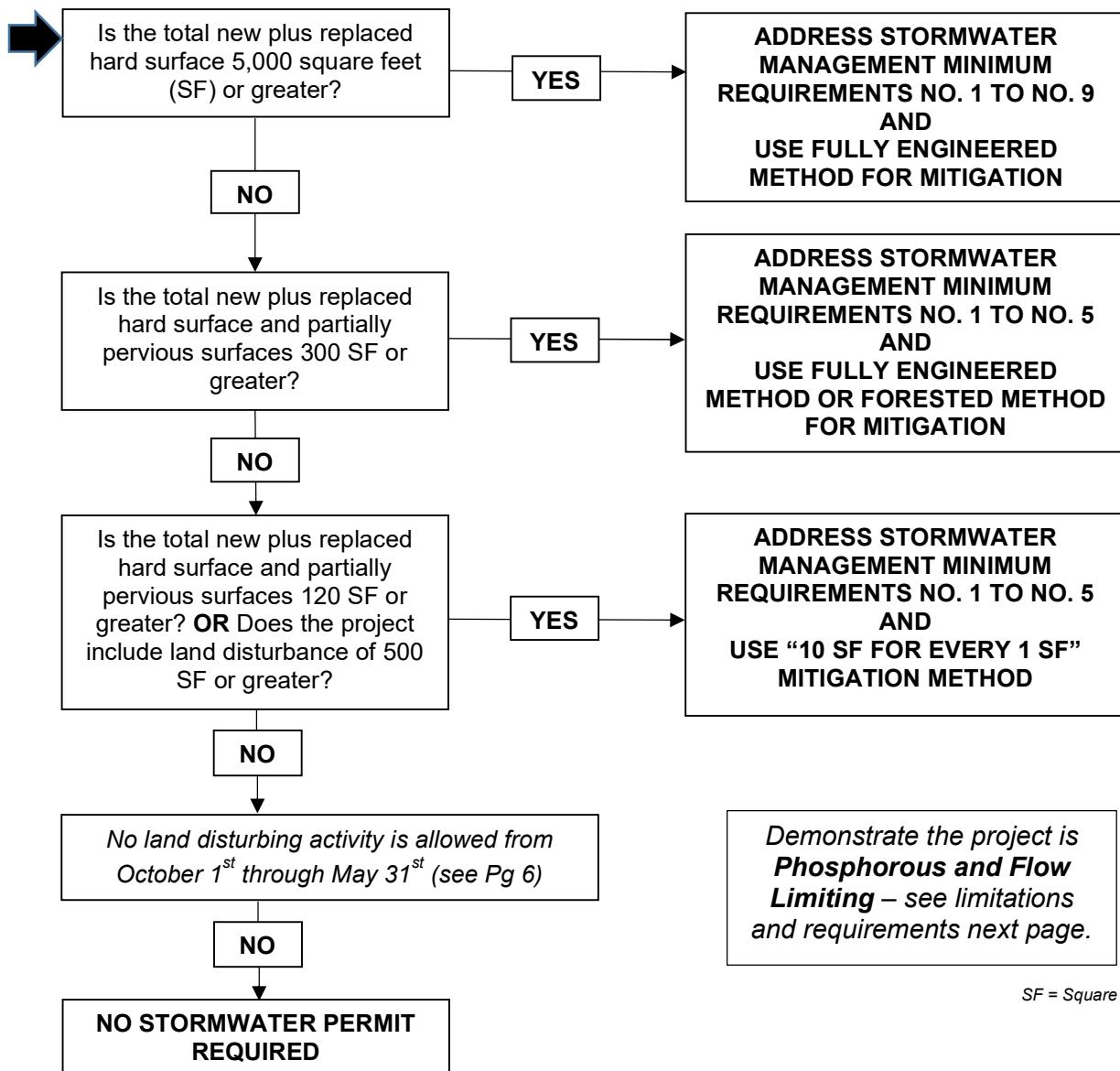




LAKE WHATCOM STORMWATER GUIDANCE

The Lake Whatcom Watershed is a critical basin. This means that the area was determined to be of exceptional significance and requires special protection. All lands, development actions and land use activities within the city limits that drain to Basin One of Lake Whatcom are subject to the Lake Whatcom Reservoir Regulatory Provisions Chapter (BMC 16.80) and special stormwater standards (BMC 15.42). There are additional shoreline requirements for properties within 200 feet of the Lake.

We encourage you to start any Lake Whatcom development project with a conversation with specialized staff from the Planning and Public Works Departments, in the Permit Center. The following information is to help you determine what stormwater management is required on properties in the Lake Whatcom Watershed Basin One.



SF = Square feet

Lake Whatcom Stormwater Mitigation Methods

Fully Engineered Method

Following [BMC 15.42.060 B.3.a](#), a stormwater site plan, prepared by a licensed civil engineer, shall be provided with site-specific controls to limit stormwater runoff to levels associated with a predeveloped forested condition and phosphorus transport to not more than 0.15 pounds/acre/year. At a minimum it must include soils reports, ground water studies, hydrologic analysis, appropriate BMPs and BMP maintenance plans. The project must also maintain or create a minimum 30% "natural forested condition" (BMC16.80.050). Any BMP or combination of BMPs will be considered that would lead to successful management of flow and phosphorus transport.

Forested Method

Following [BMC 15.42.060 B.3.b](#), the forested method does not require hiring an engineer. The site plan must demonstrate the following (the square foot or percent limits is whichever is less):

- Retain or create 75% or more of forested/native vegetation on the site.
- Do not exceed 2,000 SF of hard surface or 20% hard surface.
- Do not exceed 1,000 SF of partially pervious surface or 10% partially pervious surface.
- Do not exceed 2,500 SF of hard surfaces plus partial pervious surfaces or 25% of the combined surfaces.

10 SF for Every 1 SF Method

Following [BMC 15.42.060 B.4](#), this method applies to small projects (less than 300 square feet of new or replaced hard or partially pervious surfaces). For every new and replaced square foot of hard and partially pervious surface the applicant must demonstrate stormwater and phosphorous transport mitigation of 10 square feet.

At a minimum hard surfaces must be mitigated to the standard provided for by an on-site stormwater management plan as provided in the Stormwater Management Manual for Western Washington (Dept. of Ecology). Mitigation of partially pervious surfaces shall, at a minimum, be by way of lawn removal. Included in this packet are planting guidelines for removed lawn area.

Phosphorous and Flow Limiting Projects

[BMC 15.42.060 B.5](#) is another option for small projects or constrained lots. Ultimately the project must demonstrate that stormwater runoff is limited to levels associated with predeveloped forested conditions and include phosphorous treatment. Design of such a project may require a civil stormwater engineer. If a homeowner wants to complete a voluntary phosphorous and flow limiting project (not associated with new development or redevelopment), for example through the Homeowner Incentive Program (HIP), then the permit is free.

This type of project may be an option for non-structural projects (and full deck replacement) on constrained lots that were developed before the Lake Whatcom Regulatory Guidelines went into effect and cannot meet the fully engineered or forested method without significant redevelopment. If the project can be designed to meet the phosphorous and flow limiting requirements, those projects that exceed 300 square feet may be approved but will require an engineered plan.

Other Information

- For more information on general stormwater requirements, please see the Stormwater Permit Submittal Requirements available at this link: https://www.cob.org/Documents/planning/permit-center/forms/Stormwater%20Permit%20Submittal%20Packet_2018_final.pdf

Definitions Related to Lake Whatcom

“Partially Pervious Surface” means surfaces that cause an increase in stormwater runoff from a natural forested condition but that are not clearly a defined impervious surface. Common surfaces in this category are lawns, landscaping areas, gardens, areas that have been cleared of native vegetation, and nonengineered pervious driveways that have not been proven through engineering analysis as being capable of fully infiltrating the water from a 100-year developed condition storm.

“Lake Whatcom Watershed Basin One” means those lands within the Lake Whatcom watershed that drain into Basin One of Lake Whatcom via natural topography or through manmade conveyance systems. The boundaries of Basin One are shown on the below Map. The above definition supersedes the map whenever in conflict.

“Exempt Gardening” means gardening and landscape practices that are contained within one or more areas of a property and the total square footage of all areas together do not exceed five percent of the property or 500 square feet, whichever is the greater. Exempt gardens shall be maintained and located to prevent runoff resultant from direct precipitation, water run-on and irrigation. Exempt garden areas are not exempt from the prohibition on the use of phosphorus-containing products including fertilizers, pesticides or other deleterious materials. Landscape or gardening areas beyond the limit provided herein, and which do not meet definition of phosphorous or flow-limiting BMPs, are considered to be partially pervious surfaces and subject to the limitations and requirements of BMC Chapters [15.42](#) and [16.80](#) regarding those areas. Exempt gardens that are not in active use for gardening or landscaping purposes for more than 30 days shall provide for the stabilization of the exempt garden by the use of a Type 1 mulch or other approved method. Please note, a permit is required if land disturbance is greater than 500 square feet.

“Native vegetation” means vegetation comprised of plant species, other than noxious weeds, that are indigenous to the coastal region of the Pacific Northwest and which reasonably could have been expected to naturally occur on the site. Examples include trees such as Douglas fir, western hemlock, western red cedar, alder, big-leaf maple, and vine maple; shrubs such as willow, elderberry, salmonberry, and salal; and herbaceous plants such as sword fern, foam flower, and fireweed.

“Natural forested condition” means a vegetated condition mimicking well-established forests and supporting soils found in the lowlands of Whatcom County prior to European settlement. The pre-European-settlement condition is characterized by an extensive canopy cover dominated by native coniferous trees, a significant duff layer, and all distinct plant layers present (tree, shrub, and ground cover). The natural forested condition shall function and perform as the “forested condition” in the Department of Ecology Stormwater Manual, current edition.

Other Resources

If you live in live in the Lake Whatcom Watershed, be sure to check out the Homeowner Incentive Program: <https://www.cob.org/services/environment/lake-whatcom/pages/homeowner-incentive-program.aspx>

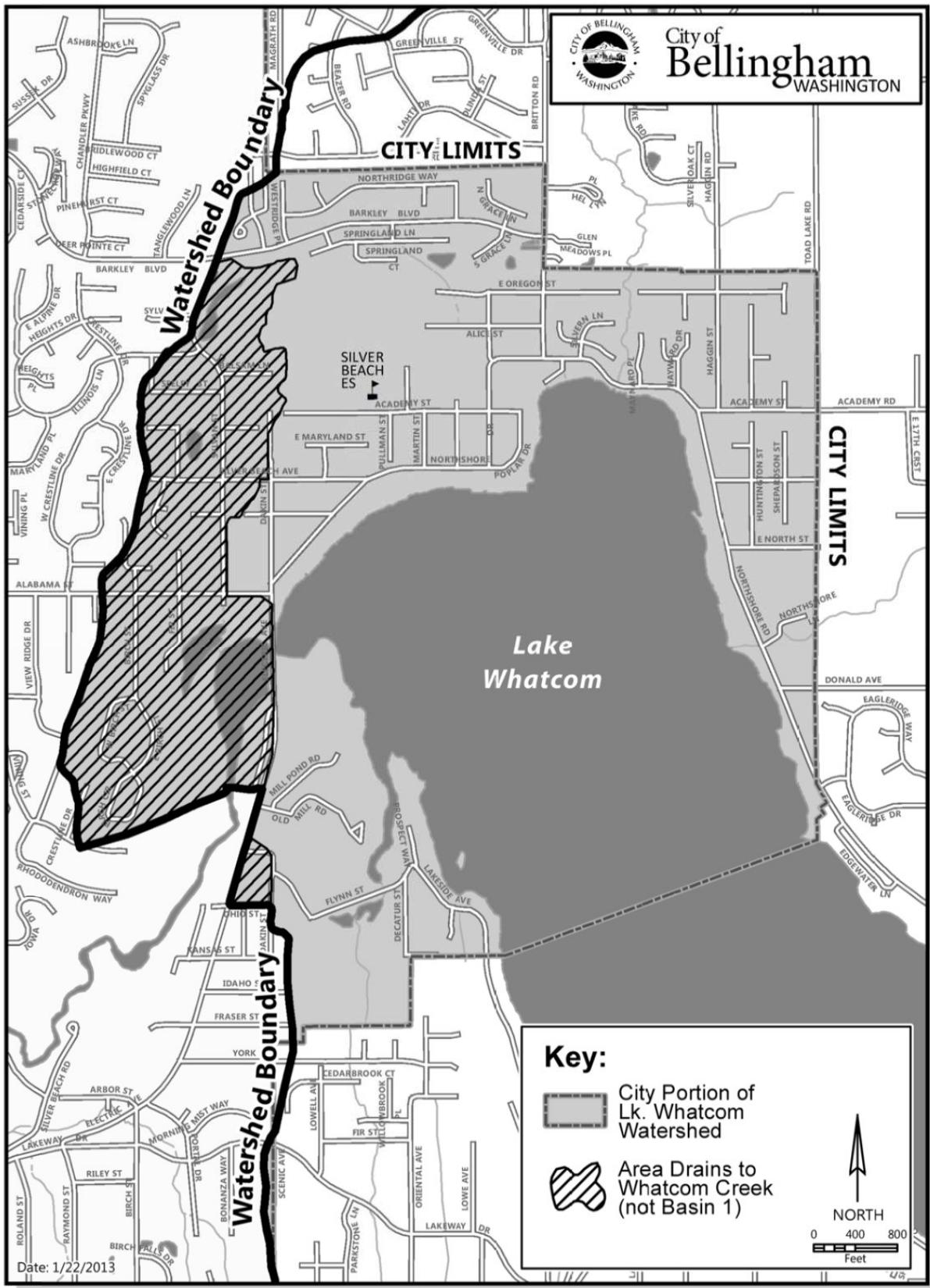


Figure 1 Map of Lake Whatcom Watershed

Interpretations of Activities in the Lake Whatcom Watershed

This information is provided to help homeowners determine permitting requirements, nothing here is intended to be in conflict with BMC 15.42 and 16.80, if found the code must be followed.

1. Replace lawn with mulch/landscaping = Replaced partially pervious
2. Replace mulch/landscaping with lawn = Replaced partially pervious
3. Replace lawn with mulch/native landscaping = Phos./flow limiting project, no additional mitigation required
4. New pervious deck over existing lawn = Replaced partially pervious
5. New pervious deck over existing mulch/landscaping = Replaced partially pervious
6. New pervious deck over existing gravel = Not new or replaced (this does not cover the area replaced for footings as this surface is actually changed)
7. New deck over existing concrete/asphalt = Not new or replaced (this does not cover the area replaced for footings as this surface is actually changed)
8. *Special case:* A new pervious deck on second story over existing landscaping may be considered not new or replaced as long as site conditions ensure existing landscaping will remain and survive. This does not apply to any necessary footings as this requires changing the surface.
9. Replace decking and/or structural wood with existing footings = Maintenance, provide proof of deterioration.
10. Replace decking and/or structural wood with new footings = Replaced partially pervious
11. Permeable pavement replacing lawn = New hard surface
12. Permeable pavement replacing mulch/landscaping = New hard surface
13. Permeable pavement that has been proven through engineering analysis as being capable of fully infiltrating the water from a 100-year developed condition storm = not new or replaced
14. Permeable pavement replacing gravel = Phos./flow limiting project, no additional mitigation required assuming it is feasible and can be installed following all requirements of the latest Ecology Manual
15. Permeable pavement replacing concrete or asphalt = Phos./flow limiting project, no additional mitigation required assuming it is feasible and can be installed following all requirements of the latest Ecology Manual
16. Permeable pavers over an infiltration facility like a trench or drywell = Phos./flow limiting project, no additional mitigation required
17. Remove gravel driveway and replace with new gravel = Replaced impervious
18. Remove gravel driveway and replace with concrete/asphalt = New impervious surface
19. Remove gravel driveway and replace with structural development = New impervious surface
20. Place fresh gravel over existing gravel = Maintenance, no mitigation required.
21. Pave with concrete/asphalt over existing gravel = New impervious
22. New roof over pervious deck or permeable patio = New impervious (if greater than 2 FT)
23. New roof over landscaping = New impervious (if greater than 2 FT)
24. New roof over any surface = If less than 2 FT, does not require mitigation.
25. New roof over existing impervious surface = Not new or replaced. (Does not apply to new footings as those would be a new or replaced hard surface, for example like a carport over an existing hard surface)
26. Replace lawn with new lawn (e.g. tear out current turf, replace with sod) = Replaced partially pervious
27. Voluntary installation of low-phosphorus compost-amended soil down gradient of lawn as "compost-amended vegetated filter strip" = Phos./flow limiting project
28. Voluntary installation of a sand filter underground, with low-phosphorus compost-amended soil and lawn as surface = Phos./flow limiting project
29. Voluntary installation of sand filter underground, with permeable rock or engineered permeable pavement as surface = Phos./flow limiting project
30. Voluntary installation of Media Filter Drain mix underground, with permeable rock or engineered permeable pavement as surface = Phos./flow limiting project
31. Voluntary installation of Lake Whatcom HIP Raingarden = Phos./flow limiting project
32. Gardening and landscape practices that do not exceed 500 square feet or 5% of the property, whichever is greater = Exempt gardening (See full definition for further requirements)

Seasonal Restriction on Land Disturbing Activities

No land-disturbing activity, including but not limited to clearing of vegetation, grading, filling, excavating or trenching of soil or earth materials, shall be permitted from **October 1st through May 31st**, with the exception of the list below and when approved in writing by the planning and public works directors.

Exceptions listed below shall be construed narrowly:

- Sheet mulching to install native plantings as part of an approved permit
- Work to establish NVPA (See Director Memo 3/8/18)
- HIP Work (See Director Memo 3/8/18)
- Pilot Infiltration Tests (See Director Memo 3/6/14)
- Emergency Exemptions as authorized on a case by case basis from PW and Planning Directors
- Exempt gardening (See definition, must be located to prevent run-on and run-off and any area not in active use shall be covered by a Type 1 low phosphorous mulch)

All bare soil must be covered. Up to 500 square feet that is directly related to exempt gardening can be exposed. However, all construction sites must follow their stormwater pollution prevent plan at all times which requires covering all soils not currently being worked (see [BMC 15.42.060 \(F.2.e.v\)](#)).

Allowable soil coverage options are below.

- Well established grass, sod or a vegetated surface sufficient to prevent the erosion or transport of soil, sediment and silt laden water. No soil or earth may be visible.
- A minimum of 3" cover of shredded wood chip/fiber, vegetative mulch, hay or straw.
- Crushed rock or gravel, not less than $\frac{3}{4}$ in aggregate size and 4" deep.
- Other approved coverage method approved in writing by the Planning and Public Works Directors.

During the construction season, utilize best management practices for all earthwork, to the maximum extent feasible to prevent the movement of earthen materials from the project area. Earthen material movement can be by stormwater run-off, vehicle transport, wind, etc. Failure to prevent the movement of earthen materials from the project site will result in the assessment of penalties per [BMC 15.42.100](#) and [15.42.110](#).

Phosphorus Restriction

No person shall apply any fertilizer, mulch, or soil amendment to properties within the Bellingham city limits area of Basin One of the Lake Whatcom watershed that is labeled as containing more than zero percent phosphorus or other compounds containing phosphorus, such as phosphate (per [BMC 15.42.050 D.1](#))

It is considered an illicit discharge if activities result in the discharge of water exceeding an average of 0.15 pounds of phosphorus per acre per year from a site or that result in the discharge of water exceeding state water quality standards for fecal coliform (per [BMC 15.42.050 C.3](#)).

Direct discharge of untreated stormwater from pollution-generating hard surfaces to ground water is prohibited, except for the discharge achieved by infiltration or dispersion of runoff from residential sites through use of on-site stormwater management BMPs in accordance with the 2019 Ecology Manual; or by infiltration through soils meeting the soil suitability criteria in the 2019 Ecology Manual (per [BMC 15.42.060 F.6.c](#)).



Planting Guidelines

Planning and Community Development Department

Phone: (360) 778-8300

210 Lottie Street, Bellingham, WA 98225

Fax: (360) 778-8301 TTY: (360) 778-8382

Email: planning@cob.org Web: www.cob.org

NVPA-Lite Planting Guidelines

How to Create Landscaping that Minimizes Phosphorus Runoff

PLANNING PHASE

Planting Plan

- Use at least a 1"=20' scale to draw a scaled planting plan (graph paper is handy).
- Show your entire lot and identify all areas to be planted and any stormwater management features you plan to install.
- Show all plant locations using symbols. Show plants in clusters or zones to avoid drawing each plant location on the plan.

Plant density and number of plants

- Shrubs 8' o.c.*
- Low shrubs (could also be ground cover plants) 5' o.c.
- At least one tree is required for every 2,000 square feet. The tree species should be selected with size-at-maturity taken into consideration. Cultivars may be accepted.
- After calculating the total number of plants, add it to the Planting Plan.

Calculate the number of plants needed by using the following calculation:

Calculate the entire planting area in square footage. Divide the area by the square of the planting density (ex. 8' on center = 64 sq. ft). The result yields the number of plants.

EXAMPLE: For a 1,200 sq. ft. planting area, use this formula: 1,200 sq. ft. (divided by) 64sq. ft. = 19 shrubs.

Plant species

- Follow the "right plant/right place" motto.
- Use at least five different species of native plants. Attain "layering" by selecting plants that have many different heights and widths at maturity.
- Consult the King County Native Plant website for native plant information and photos <http://green.kingcounty.gov/gonative/Index.aspx> or the Sound Native Plants website <http://www.soundnativeplants.com/index.htm>.
- Up to 10% of the total quantity of plants can be ornamentals; avoid plants that require pesticides or that are on the weed list below.
- Do not use butterfly bush, English ivy, Himalayan blackberry, or lamium. For a complete list of weeds, see the Whatcom County Noxious Weed website: <http://www.co.whatcom.wa.us/publicworks/weeds/pdf/countylist10.pdf>.
- After selecting plants, add the list to the Planting Plan.

Plant size

- 2 yr./18" min. or 2-gallon size is optimal.
- Small plants are easier to transport, plant, and adapt faster than larger specimens that are balled and burlapped.
- Add the list to the Planting Plan.

*o.c. = on center (a density measure)

Project goal

- Set a goal for your project using such measures as number of layers of plants, number of species thriving, area of vegetation coverage (as a % of total planting area), percent improvement of runoff volume, etc.
- Include the goal on the Planting Plan.

Planting schedule

- Develop a planting schedule that identifies dates for sheet mulching if it's needed to replace lawn; include planting month. Planting may occur during the seasonal restrictions, October 1st through May 31st, but only if a no-fee stormwater permit is obtained first (unless the planting is part of a permitted project).

Purchasing plants

- Contact local nurseries for availability of desired plants.
- Plant availability varies with season so plan ahead for purchasing.

IMPLEMENTATION PHASE

Mulch specs

- Cover all lawn areas with cardboard and a minimum of 5 inches of mulch from the City's mulch list. (NOTE: Don't use compost or beauty bark!).
- Cardboard that is wetted first will be easier to plant through. Do not use waxed cardboard and remove any tape that may be stuck on cardboard. Consider buying rolled cardboard from a local source. If the slope is greater than 5%, omit the cardboard and increase the depth of mulch.
- You can omit the cardboard if the mulch depth is at least 6 inches. The cardboard helps suppress the grass so that it will become an easier and better planting medium.
- Calculate the total volume of mulch needed at 4 to 5 inches deep. Multiply the depth of mulch by the square footage of the total area to be spread and divide by 27 for the total cubic yards of mulch needed. Add this volume of mulch to the Planting Plan.

Planting method

- Plant shrubs in clusters or zones of like plants.
- Plant trees at least ten feet from the foundation of the house and paved surfaces; consider the size of the tree at maturity.
- Keep name tag on branch of plant (not stem) or otherwise mark at least one of each species.
- Plant through the cardboard without letting wood chips into the planting hole or touch the plant stem.
- If planting on a steep slope, "cribbing" may be needed. Use untreated wood to create small terraces and use 6 inches of mulch so the weight of it helps keep it in place.

MAINTENANCE PHASE

- Water plants once/week to a depth of two inches whenever less than one inch of rainfall occurs over any two-week period from June 1—August 15, and once every other week from August 16—September 30.
- Pull weeds and replenish mulch when soil feels compacted or weeds are numerous.

Source	Product Name	Address	Phone	Website
Perry Pallet	Appearance Grade Chip Red Mulch Light Brown Dark Brown Black Mulch Playground Chip Bedding Chip	6940 Delta Line Road, Ferndale	360-366-5239	www.perrypallet.com
Lenz Enterprises	Lenz Mulch Cedar Chips Black Bark Mulch Lenz Medium Bark	Locally Available By Delivery Only	360-961-3112 360-629-2933	www.greenblenz.com
GrowSource	Cedar Chips 3-Way Topsoil 4-Way Topsoil Medium Bark Black Mulch Fine Mulch	2200 Division Street, Bellingham	360-318-8554	www.growsource.com
De Wilde's Nursery	5-Way Topsoil Medium Bark Fine Bark Green Earth Compost Smit's Dairy Compost Mushroom Compost	3410 Northwest Ave. Bellingham	360-733-8190	www.dewildesnursery.com
Cowden Gravel	Topsoil Fine Bark	3462 Cedarville Rd. Bellingham	360-592-4200	www.cowdeninc.com
North Star Stone & Landscape Supply	4-Way Topsoil Mix Medium Bark 3-Way Topsoil Mix Fine Bark Mushroom Compost	4840 Pacific Hwy. Bellingham	360-383-9090	www.northstar-stone.com
Green Earth Technology	2-Way Topsoil 3-Way Garden Soil Bioretention Soil Media Hog Fuel 4" Minus Medium Wood Mulch	774 Meadowlark Rd. Lynden	360-354-4936	www.greenearthtechnology.com
Salazar's Nursery	3-Way Soil Cedar Play Chips Small Nugget Bark	1121 W. Division St. Mt. Vernon.	360-428-2896	www.salazarsnursery.com
Plantas Nativa	Black Mulch Hog Fuel	315 E. Champion St. Bellingham	360-715-9655	www.plantasnativa.com
Starkenberg Shavings	Cedar Chips Hog Fuel Medium Fir Mulch	1546 Slater Rd, Ferndale	360-384-5487	
Smit's Dairy Compost Facility	Smit's Dairy Compost	9039 Guide Meridian, Lynden	360-354-3583	www.smitscompost.com
North Hill Resources	Potting Soil 2 Way Topsoil Black Mulch Double Grind Hog Fuel	651 N. Hill Blvd. Burlington	360-757-1866	www.northhillresources.com

For the most up to date approved mulch list and other resources, visit:

<https://www.lakewhatcomhip.org/resources-2/>