SUSTAINABLE WINEGROWING BRITISH COLUMBIA

Inspired people growing outstanding wine

Vineyard Management Plan Template

March 2022

March 8, 2022

Welcome to Sustainable Winegrowing BCs' approach to Vineyard Management.

This Vineyard Management Plan (VMP) Template consolidates the sections related to the VMP requirements outlined in the Sustainable Winegrowing BC Vineyard Standard Criteria A.10:
Growers design and implement a VMP to organize all actions and measures designed to improve the sustainability of their farms and its compliance with the SWBC Vineyard Standard; including general guidelines, expected results, deadlines and responsible parties, progress milestones for multiple-year implementation, policies, work calendars, and other specific plans as required by this standard. The VMP must include information for the following topics:

a. Conservation Plan – Criterion B.33 (ECYR2); protection of natural ecosystems, biodiversity and natural resources
b. Erosion Control Plan – Criterion B.4 (EC YR0); and Soil Management Plan – Criterion C.3
c. Nutrient Management Plan – Criterion C.9 (EC YR0)
d. IPM plan – Criterion D.1 (EC YR0); Integrated Pest Management (IPM) and agrochemical management.
e. Health and Safety Plan – Criterion F.13 (EC YR2); occupational health and safety
f. Succession Plan – Criterion F20 (CIC); succession issues

Reference to specific guidance materials and templates that are available to assist with completion of the plan are provided within. All guidance material and template references in this plan can be found on the SWBC Website in the Resources Section, (https://sustainablewinegrowingbc.ca/member-resources).
The references to resources throughout this template are abbreviated as follows:

- See Vineyard Standard - Letter and number references, such as A.4, B.12, etc., refer to specific criteria within the SWBC Vineyard Standard
- GB 2016 – Refers to Guidance materials found in the *Sustainable Practices for BC Vineyards Guidebook 2016*
- TC 2016 - Refers to templates found in the *Sustainable Practices for BC Vineyards Templates and Checklists 2016*
- BPG – Refers to the 2010 BCWGC Best Practice Guide
- Guidance 2020- Refers to guidance materials and templates developed in that year

* We thank you for your patience as we work toward updating all our guidance materials in 2022 to create a comprehensive document that easily cross references to the Sustainability Standards as well as providing further essential information regarding grape growing in British Columbia.

The completion of a VMP, as outlined in this template, is designed to fulfill the documentation requirements for certification in Year 0 as well as assist the user with completion of requirements for Year 3 audit/certification.

We strongly recommend the completion of an Environmental Farm Plan through the Ministry of Agriculture as a prerequisite to SWBC Certification. A Planning Advisor and financial assistance will be made available to you for completion of items such as Nutrient Management and Integrated Pest Management Plans. Funding also can cover Best Management Practice upgrades for fertilizer application tools, irrigation upgrades, etc. There is no cost to the applicant to receive an EFP.

The Program Manager of SWBC, Katie Pease, is available to assist you with the completion of this template. Please phone her at 250-212-0682 to begin the conversation. Alternatively, email: info@sustainablewinegrowingbc.ca.

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1. Vineyard Introduction

Please introduce us to your vineyard, sharing aspects such as:

- History and Current Context: Date of Acquisition, Total property acreage, Vineyard acreage, Soil Classification (Including major details such as soil type present, parent material, and texture), Major climatic factors (wind direction, annual precipitation), Water table depth, Irrigation system, Relevant Soil/Vineyard Management history (prior to purchase or since acquisition), Any relevant maps or aerial photographs

See Guidance:

- GB2016 - Chapter 1 & Chapter 5.1-2

See Templates:

- TC2016 - pg.2, Vineyard Site Plan

See Vineyard Standard Criteria:

- A.4, A.7, A.8, A.10

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2. Conservation Plan

Essential Criteria Year 2

B.33 Growers develop and implement a conservation plan to organize and detail all the actions necessary to comply with all the essential criteria of this standard related to the conservation of natural ecosystems and resources and make progress towards achievement of the Continuous Improvement Criteria in that area (see Criterion A.10). The plan must include:

a. Objectives of the actions to be implemented.

b. Quantitative targets and parameters.

c. Time-bound management actions.

d. Resources and responsible personnel to be assigned.

e. Actions for:

i. No intervention and conversion of forests and ecosystems.

ii. Conservation of non-pest or non-invasive plants or animals.

iii. No contamination.

iv. Natural restoration and succession of native vegetation and ecosystems, if applicable.

See Guidance:

- GB2016 - Chapter 2
- TC2016 - pg.3, Ecosystem Management Map

- Guidance2020 - pg.25, Generic plan or program content
- BPG - Chapters 3 & 4

See Templates:

- Guidance 2020 - pg.37, Generic Plan Example

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3. Erosion Control Plan

Essential Criteria Year 0

B.4 Growers develop an Erosion Control Plan to organize and implement all the actions and best practices to minimize soil erosion and control runoff water. The plan includes general guidelines, expected results, deadlines and responsible parties, and progress milestones for multiple-year implementation.

See Guidance:

- GB2016 - Chapters 3.4. Soil Management, 4.14 through 4.18 Soil Management, 5.8 and 5.9 Water Management, 5.15 and 5.16 Surface Water

See Templates:

- Guidance 2020 - pg.37 Generic Plan

See Vineyard Standard Criteria:

- B.5- B.7 Essential Year 0
- B.8-13 Continuous Improvement

3.1. General Approach

Summarize the company's general approach to erosion control, including any use of vegetation (spontaneous or seeded/planted) for erosion control, and any weed management or soil management practices that may affect soil erosion/degradation (eg. tilling or ripping, herbicide use, irrigation type).

3.2. Site Concerns and Year 0 Approach

Describe erosion control concerns for each vineyard site specifically, including reference to local topography, climate patterns, and water sources. Include reference to any specific blocks within each vineyard that are at greater or lesser risk of erosion.

3.3. Goals for Future Improvements

Describe any future improvements to the erosion management practices mentioned above that will help to further reduce erosion.

3.4. Expected Results

Describe the expected outcomes and means of monitoring the effectiveness of the erosion management plan. This could include expected visual observations as well as quantitative observations.

3.5. Schedule, Milestones, and Responsible Parties

List concrete milestones that will clearly demonstrate the progress of the erosion management plan. List all relevant deadlines related to erosion management goals, dates for recording progress observations, and the responsible parties.

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4. Soil Management Plan

Essential Criteria Year 0

C.3 Growers develop and implement a soil management plan to identify specific practices for conserving soils, preventing soil loss and degradation, and maintaining and enhancing soil fertility. Growers should seek the support of experts to help develop any of the elements of this plan. The plan includes:

a. the identification of areas susceptible to erosion, compaction, or other types of soil degradation (covered in chapter V. of this Vineyard management plan, see Criterion B.4);

b. the identification of naturally low fertility or other types soils that require special management to maintain or improve crop health;

c. soil conservation actions to minimize soil degradation and restore soil health for the areas identified in points a and b, and for the vineyard in general

d. a soil sampling plan for laboratory analysis based on soil types and production goals, and the correct sampling techniques for the desired analysis;

e. records of soil and water analysis within the last three years;

This plan must be included as part of the Vineyard Management Plan (see criterion A.10). Growers should seek the support of experts to help develop any of the elements of this plan.

See Vineyard Standards Criteria:

- C.1-2, B.4-9, B.15

See guidance:

- Guidance 2020 – pg.3 soil sampling guidance update,
- GB 2016 Chapter 1.1, Chapter 4 (4.1-2)(4.14-4.18), Chapter 5 (5.3-5.14),
- BPG Chapter 4 Vineyard Maintenance

See Templates:

- TC2016 – pg.7 Soil Management Map

4.1. Erosion, Compaction and Soil Degradation

Identify areas susceptible to erosion, compaction, or other types of soil degradation and describe the specific nature of these risks.

4.2. Identifying Areas of Special Management

Identify areas of naturally low fertility and areas with soil types that require special management to maintain or improve crop health.

4.3. Soil Conservation Actions

Describe soil conservation actions being undertaken to minimize soil degradation and restore soil health for the areas identified in points a and b, and for the vineyard in general (C.3.c)

4.4. Soil Sampling Plan

Create a soil sampling plan for laboratory analysis based on soil types and production goals, and the correct sampling techniques for the desired analysis. Specifically, include the lab performing the analysis, tests performed, and frequency/dates of sampling and testing

4.5. Soil and Water Analysis Records

Attach all relevant soil and water analysis records, including historical analysis.

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5. Nutrient Management Plan

Essential Criteria Year 0

C.9. Growers develop a nutrient management plan and incorporate it into their soil and fertility management plan, that:

a. identifies nutrient needs and fertilization timing;

b. keep records of tissue and fruit quality analysis:

c. includes actions to enhance fertilization management and nutrient availability for vines;

d. documents for all nutrient applications and any changes and/or deviances from the plan; and

e. is in accordance with the requirements of the Minister's Regulation – Code of Practice for Agricultural Environmental Management.

See Guidance:

- GB2016 – Chapter 4.1-13,
- BPG - Chapter 4 pp 4-14 through 4-31

See Templates:

- TC2016 - pg.6 Nutrient Management Plan Template,
- Guidance 2020 - pg.34 Pesticide Record: Single Application, pg.38 General Pesticide Application Record

5.1. Introduction

Please give a short introduction to your NMP process.

5.2. Petiole Sampling and Analysis

Describe plant tissue sampling method and timing, the laboratory that conducts the tests, and attach relevant historical analysis.

5.3. Soil Sampling and Analysis

Describe soil tests performed, timing of tests, laboratory where they are conducted, and attach relevant historical analysis.

5.4. Water Sampling and Analysis

Attach relevant historical water sampling and analysis, and comment on timing of recurring tests.

5.5. Cover Crops

Describe any relevant cover cropping programs at the vineyard sites (present or future).

5.6. Fertilizers

List all fertilizers and foliar feeds used on the vineyard site. Include information on product composition, application rates, and the reason for use. Following this list, provide a general description of short and long term management goals.

5.7. Rate and Timing of Fertilizer Application

List or attach documentation (eg. table, excel spreadsheet, notebook) detailing any planned fertilizer product applications, the rate of application, and timing of application. Describe overarching management principles behind plant nutrient management and how these application rates are determined. Include any relevant analysis used to determine application necessity and rate, such as visual observations, petiole analysis, or soil analysis.

5.8. Methods of Nutrient Application

Describe the methods used for fertilizer application (both foliar and granular, if applicable), list the staff responsible for these operations and attach any relevant pictures if possible.

5.9. Review and Update

To be completed periodically throughout the season and formally before starting your fertility program for the following year.

- Actual application rates
- Actual application dates
- Actual material that was used
- Tonnage
- Outcome of application (i.e. enough, too much, too little for crop and quality goals)
- Events that caused deviation from the plan (e.g. weather, lack of labour, crop maturity)

6. Integrated Pest Management (IPM) Plan

YR 0 Essential Criteria

D.1 Growers develop, implement, and document an integrated pest management plan as the first resource to manage weed and phytosanitary conditions of vineyards, to ensure optimal productivity and quality. The IPM plan includes:

a. The identification of the weeds, pests and diseases that occur in the vineyard based on observations, historical records, technical documents, and expert advice. Each pest and disease should be described in terms of their interaction with grapevines, life cycles, natural predators, preferred food and environment requirements; and any other information as considered relevant.

b. A description of the physical, biological, chemical and other prevention and control mechanisms for each weed, pest and disease.

c. The identification of intervention [pest] thresholds, those levels of pest and disease outbreaks that trigger different control mechanisms for each pest and disease.

d. A weed, pest and disease monitoring plan, as described in criterion D.2.

e. The mechanisms to be employed for capturing information about weed, pest and disease prevention and control and analyzing it to determine the results and future actions.

f. A training plan that defines the training that vineyard management and workers will need to correctly implement the IPM program and sets out how and when training will be carried out.

g. A system to track the beneficial effects of biodiversity—insects, plants, and animals—so that these can be protected and increased, and that the negative effects of production activities on them can be avoided.

See Vineyard Standard Criteria:

- D2. D4. D16. D17. D18.

See Guidance:

- Guidance 2020 pg 14
- GB 2016 Chapter 6.1-6.6
- BPG Chapters 5, 5.3 and 7.

See Templates:

- Guidance 2020 (pest And disease Description, pesticide Record: single application, General pesticide Application Record, General Plan Example)
- TC 2016 Integrated Pest Management Checklist PG.9, Integrated pest management records checklist pg.10.

6.1. Introduction

Describe the overall approach to pest and disease management taken, the staff responsible, and the guiding principles behind this approach

6.2. Disease, Weed, Pest and Problem Wildlife Identification

Disease

Describe/List common diseases that affect crop health at this vineyard site, and in the region as a whole. Include details such as the pathogen's mechanism of action, its lifecycle, and common climatic or other conditions that affect its spread and severity.

Pests

Describe/List common pets (both invertebrate and otherwise) that affect crop health at this vineyard site, and in the region as a whole. Include details such as the pests' habitat, lifecycle, and the way in which they affect crop size, quality, and/or plant health.

Problem Wildlife

Describe/list any wildlife at the vineyard site or in the region in general which adversely affect crop size/quality, plant health, and worker safety. Include details on their habitat, diet, lifecycle, and the manner in which they interact with both vineyard staff and crops.

Weeds

Describe the principal species of plants which have a negative impact on vineyard sustainability. Include their lifecycle, as well as climatic conditions, vineyard management practices, and other factors which affect their

6.3. Prevention and Control Mechanisms

Prevention

Describe any proactive P+D prevention measures used in the vineyard(s).

Organic Control Mechanisms

Describe all organic P+D control mechanisms. List all products used in the vineyard(s).

Non-Organic Control Mechanisms

Describe all inorganic P+D control mechanisms. List all products used in the vineyard(s).

6.4. Intervention Thresholds

List and describe all intervention thresholds for pests and diseases in the vineyard. These can be both quantitative and qualitative in nature.

6.5. Data Gathering and Analysis

Describe IPM data gathering and monitoring procedures, their frequency, and the staff members responsible.

6.6. IPM Training Plan

Describe the IPM training plan for new and existing staff members.

6.7. System to Track Beneficial Effects of Biodiversity

Describe any current or future systems in place to track biodiversity and its effect on crop health. These can be quantitative or qualitative in nature.

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7. Irrigation Optimization

YR 0 Essential Criteria

E.1 Growers install backflow prevention devices in line before any injection equipment.
E.2 Growers test the irrigation distribution uniformity and the overall application efficiency of the irrigation system at least once every three years, keep records of the test results, and analyze those records to implement changes in or adjustments to the irrigation systems.
E.3 Growers identify and delineate irrigation management zones in the vineyard.
E.4 Growers test irrigation water at least once annually or obtain data on water quality from their water purveyor. Vineyards send irrigation water samples for laboratory analysis at least once every five years if they have their own water system (well water); otherwise they request the water analysis results to their local purveyor (see criterion C.2 for water testing).
E.5 Growers analyze the results of water testing to identify any potential problems and their respective management solutions and document any decisions as part of their management system.

E.6 Growers implement mechanisms to monitor and measure water use. Mechanisms may include but are not limited to installing flow meters on wells and/or other water sources and pumps, either directly or through their water purveyor; getting water use metrics directly from their water purveyor; and/or record keeping of water use within the vineyard.

E.7 Growers use low-volume irrigation (e.g. drip irrigation, micro-sprinklers) or have plans to transition to low-volume irrigation within three growing seasons after the first assessment date

E.8 Growers perform and document maintenance activities for all irrigation and water distribution systems at least once every irrigation season. This includes but is not limited to checking filters, gauges (flow meters and/or pressure gauges), pressure control meters, relief valves, submains, drip lines, and emitters, repairing line leaks and breaks, and fixing any head rotation or emitter problems.

See Sustainability Standard: E.9-20

See Guidance:

- GB2016 – Chapter 5, Chapter 3.5,
- BPG – Chapters 3 and 4

See Templates:

- TC2016 - pg.8 Irrigation Management Map
- SWBC Website- Resources Section – Water Tracking Tool

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8. Health and Safety Plan

Essential Criteria Year 2

F.13 Growers develop and implement a health and safety plan that:

a. is developed according to industry standard resources and is based on a risk analysis of production activities and tasks;

b. includes all the requirements of applicable law and regulations; and

c. is adjusted to the operations size and type.

See Guidance:

- GB2016 - Chapter 7.7
- BPG - Chapter 9.1

See Templates:

- TC2016 – pg.11 Employee Orientation Checklist-Health and Safety

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9. Succession Plan

Continuous Improvement Criteria

F.20 Growers have a long-term plan that encompasses the key issues for their future. This plan is periodically reviewed based on their operations' financial, sustainability, and production information. The plan should include or consider, among other issues:

- future production, sales, and income scenarios and goals;
- ideas and plans for vineyard expansion;
- infrastructure and equipment improvements and needs;
- a long-term staffing and recruiting strategy based on projected staff needs;
- a succession plan for renewing or new leadership, or renewing ownership on smaller properties; and
- possible resource—economic, human, and natural resources—constraints and ways to address them, including future sustainability actions and improvements.

See Guidance:

- GB2016 - Chapter 7.8

See Templates:

- TC2016 – pg.13-15, Steps in the Succession Planning Process & Components of a Written Succession Plan