



SECTION THREE

CREATING A STORMWATER MANAGEMENT PLAN FOR YOUR HOBBY FARM

Section 3 provides you with tools to plan a new hobby farm or improvements to an existing one, so your farm's activities will minimize impacts on our state's valuable water resources.

Now let's make use of the information you gathered following the guidelines in Section 2 to help you understand your site. The Fact Sheets in this Section will help you develop a "Stormwater-Friendly" Hobby Farm Plan.

This handbook deals with the stormwater-related aspects of your hobby farm. The information in this section focuses on elements of planning or improving your farm that relate to stormwater. You may need to seek assistance elsewhere for other aspects of planning your farm (for example, choosing the crops you want to raise and identifying the best methods for cultivating them, selecting the animals you will keep and learning the requirements for their care, and other important planning decisions). Part of your planning effort should be to organize your property and farming activities to properly control stormwater impacts.

The following Fact Sheets are intended to assist you in answering the following questions:

- How will you arrange your hobby farming activities, along with Best Management Practices, so that you can enjoy hobby farming while avoiding stormwater impacts?
- How will you operate your farm to avoid impacts from land disturbance, excessive irrigation, use of fertilizers and agricultural chemicals, incidental and accidental spills, management of animal waste, and management of other wastes?



FACT SHEET 3.1

MAPPING YOUR HOBBY FARM

As you plan or make improvements to your Hobby Farm, you will want to develop a rough map or sketch showing existing site characteristics.

Your goal is to develop a good working description of your farm site, noting all of the features that will help you meet your farming goals, while managing your hobby farm to avoid, minimize, or address stormwater impacts.

A working base map of your existing site is a good way to document these features. It will help you navigate through any applicable local and/or state regulations or restrictions that may apply to your site due to the location of water resources or other features. Finally, it will serve as a template for planning your hobby farm and be critical should an emergency arise. Use Checklist 3A to develop your base map.



WHAT INFORMATION SHOULD YOU SHOW ON YOUR MAP?

The map of your property (also referred to as an “existing conditions site plan”) should show the following features:

PRIMARY FEATURES	DESCRIPTION	WHERE TO OBTAIN
SITE BOUNDARIES	Depending on the area of your property dedicated to your hobby farm, this might consist of your entire property, or just the portion of the property where your farming activities will be located.	<ul style="list-style-type: none"> Local Assessor’s Office Deed description Lot survey OLIVER* database
ROADS AND DRIVEWAYS	Roads in front of and nearby your property, including the name of the roads, and driveways on your property.	<ul style="list-style-type: none"> Google Maps/Earth Local Assessor’s Office OLIVER* database
BUILDINGS AND STRUCTURES	Location and outline of buildings and structures on your property, along with general description (e.g. house, horse barn, livestock pen).	<ul style="list-style-type: none"> Google Maps/Earth Local Assessor’s Office Lot survey OLIVER* database
SURFACE WATER RESOURCES, BUFFERS AND SETBACKS	Locations of wetlands, streams, rivers, lakes, ponds, and coastal resources on or near your property. Note that some water resources have legally defined “Buffer Zones” where proposed activities are subject to review by the local Conservation Commission. Others may have setbacks regulated under the Watershed Protection Act by the Department of Conservation and Recreation.	<ul style="list-style-type: none"> Google Maps/Earth OLIVER* database Local Conservation Commission Watershed Protection Act Map: www.mass.gov/eea/agencies/dcr/water-res-protection/watershed-mgmt/the-watershed-protection-act.html

NATURAL VEGETATED AREAS	One of the practices used to help minimize stormwater is the use of a vegetated buffer between your farming activity and a water resource. If your property has existing wooded areas or areas with native grasses and shrubs, you should show them on your map – especially where they border an existing stream, wetland, or other water resource.	<ul style="list-style-type: none"> • Google Maps/Earth • OLIVER* database
GROUNDWATER RESOURCES	Some pollutants such as nitrates from fertilizer are not easily filtered and can easily reach groundwater sources if allowed to infiltrate through soils. Public groundwater drinking water sources have a delineated “Zone II” protection area, which may have certain restriction. These should be mapped.	<ul style="list-style-type: none"> • Google Maps/Earth • OLIVER* database • Local Conservation Commission
SLOPES	The slopes on your hobby farm play an important role in the management of erosion and stormwater. Knowing where these slopes are and where they lead to should be noted on your map.	<ul style="list-style-type: none"> • Site visit
SOILS	Locate any unique features associated with your site soil conditions such as areas with rock outcrops and areas that are too soft to drive your mower or tractor across.	<ul style="list-style-type: none"> • Site visit

* OLIVER is an interactive online data viewer for Massachusetts that can help identify various features on and around your hobby farm.

Depending on the size and activities of your hobby farm, supplemental information may be required, including:

SECONDARY FEATURES	DESCRIPTION	WHERE TO OBTAIN
WILDLIFE HABITAT	Identify locations mapped by the Massachusetts Department of Fish and Game under the Natural Heritage and Endangered Species Program (NHESP) to locate on your map.	<ul style="list-style-type: none"> • Local Conservation Commission • Massachusetts Department of Fish and Game • NHESP Habitat Maps: www.mass.gov/service-details/regulatory-maps-priority-estimated-habitats
EXISTING DRAINAGE FEATURES AND PATTERNS	<p>To plan your hobby farm for stormwater management, you will need to understand how runoff finds its way across your property. Add the following features to your map:</p> <ul style="list-style-type: none"> • Roof drains and where they discharge (e.g., to ground surface, dry well, storage barrel, garden area) • Swales or shallow ditches that convey stormwater from one location to another • Culvert crossings beneath driveways, roads and trails • General flow patterns across the site (e.g., high ground to low ground) • On-site low areas where stormwater soaks into the ground • Storm drains and/or catch basins 	<ul style="list-style-type: none"> • Most features can be observed on-site – it may be helpful to observe flow patterns when it rains

<p>SERVICE UTILITIES</p>	<p>There are a variety of utility services that could be located within your property. If the services are located underground and you know where they are, plot them on your map. If you know you have a particular service, but do not know its location, note this on your plan. Include the following:</p> <ul style="list-style-type: none"> • Private water supply well(s) • Service lines for public water and sewer if available • Septic systems and connections to house • Gas service pipelines • Above-ground electrical, telephone, and cable lines, including pole locations; or underground electrical, telephone, and cable lines • Easements - your property could have easements to allow another party access for any number of reasons (e.g., if a utility runs through your property, an easement may exist to allow the utility company access for repairs) 	<ul style="list-style-type: none"> • Board of Health (private wells and septic) • Municipal water and sewer department (public water and sewer) • Gas company (gas service pipelines) • Electric company (underground electrical) • Deed (description of any easements on property)
---------------------------------	---	--

CONDUCT A “PROBLEMS AND OPPORTUNITIES” TOUR OF YOUR SITE

Once you have completed a draft of your working map, take a tour of your site with map in hand, and look for features that have problems to be addressed or that might have features you want to take advantage of.

The following is a partial list of features to consider:

Potential problems

- Areas on your site showing evidence of erosion, look especially for areas where gullies are present or appear to be forming
- Areas that appear to be deposits of sediment left by past runoff events
- Areas with exposed soils that are not going to be used for crops or groundcover
- Farming activities located in close proximity to surface waters or wetlands
- Areas where animals have destroyed the groundcover by overgrazing or trampling
- Banks of streams, ponds, or other water resources that have been damaged by past grazing, construction activities, vehicle traffic, or foot traffic
- Areas damaged by use of all-terrain vehicles, mountain bikes, or other vehicles
- Existing springs or low wet areas, not otherwise shown as water resources on plan



Potential opportunities

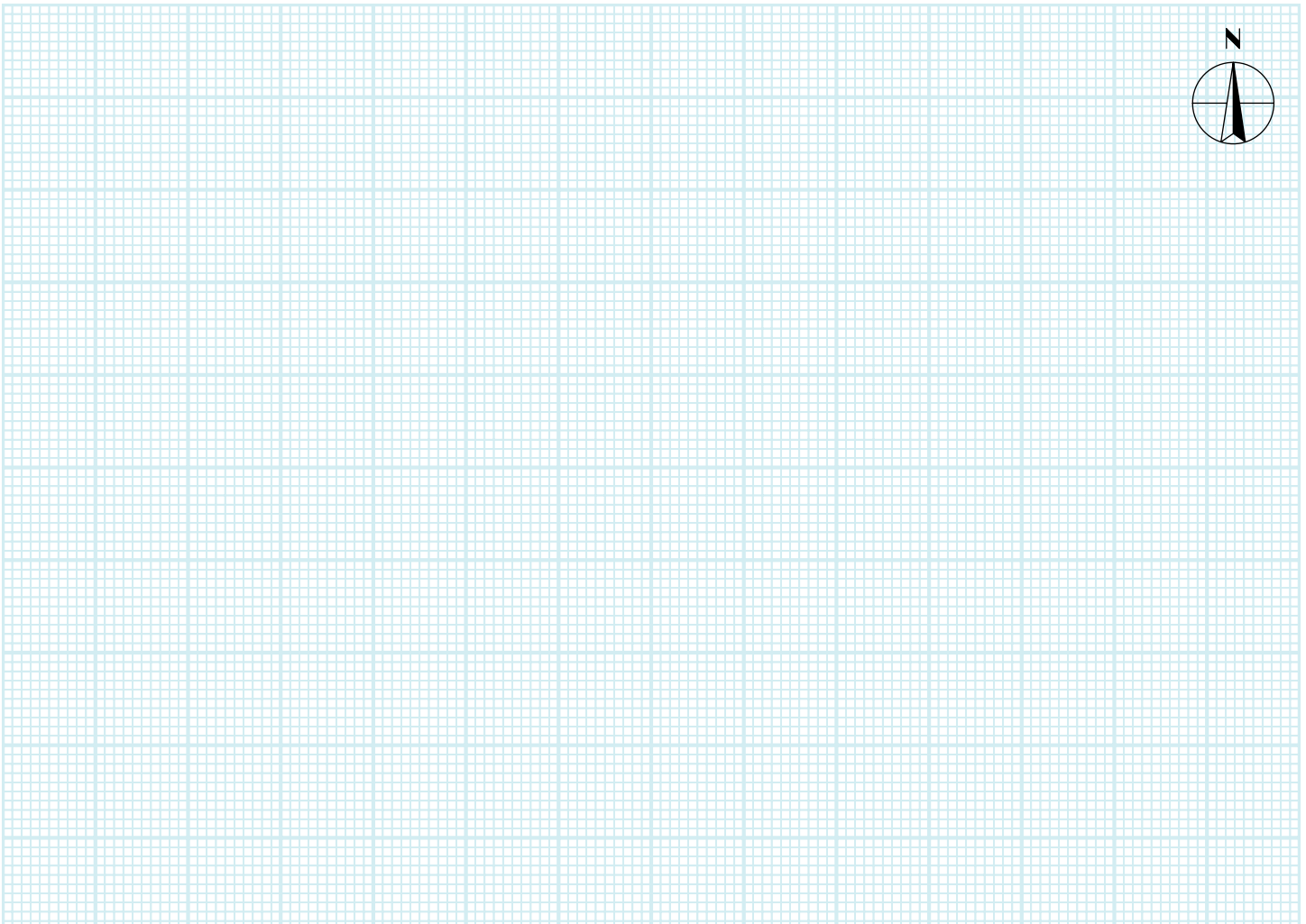
- Existing trees, wind breaks, wooded stands, and other vegetation that might be preserved to enhance your landscape, serve as a buffer, or serve as a friendly fence between you and your neighbors
- Existing views you want to keep to enhance your property
- Existing connections to public trails that you might want to preserve so that you can use them as part of your hobby farm activities (for example, if you keep horses to ride for pleasure)
- Existing orchards, berry patches, individual fruit bearing trees, or other plantings that you might want to maintain as part of your farming operation



CHECKLIST 3A

MAP OF EXISTING SITE

- Draw the approximate property boundaries.
- Draw the road(s) that run(s) in front or adjacent to your property. Include the name(s) of road(s).
- Draw buildings as they exist on the property and their approximate shapes.
- Draw and label surface waters, including locations of wetlands, streams, rivers, lakes, ponds, coastal waterways, and their buffers (as discussed with local Conservation Commission), on or near your property. Remember, even offsite wetland and water resource areas can impact what you are allowed to do on your property.
- Draw existing wooded areas or areas with native grasses and shrubs.
- Draw groundwater protection areas (as known).
- Indicate service utilities such as private water supply wells and septic systems, public water and sewer connections, gas lines, electrical, telephone, and cable lines, including pole locations, and any easements on property (as known).
- Draw existing drainage features and patterns, including roof drains, swales/ditches, low areas, culvert crossings, roads and trails, storm drains and catch basins with general flow arrows.





FACT SHEET 3.2

MAPPING YOUR HOBBY FARM STORMWATER PLAN

The Hobby Farm Stormwater Plan has two major components: a map showing how hobby farm activities are arranged on your property, and an operational plan that tells how you plan to manage the farm to prevent stormwater impacts.

We recommend that you prepare a plan using a base map of your property. This map will be helpful to you if you need to apply for any permits under state and local regulations. More importantly, it will help you think about how to arrange farming activities on your property to minimize and manage stormwater impacts and even deal with emergencies. You will want to use this mapped plan of your hobby farm to help you locate farm activities away from streams, ponds, wetlands, and other water resources and identify where you need vegetated buffers or other barriers or best management practices to prevent unwanted impacts to those water resources.

To complete this plan, you will need to have reviewed Section 2 of this handbook, to have an understanding of important issues related to stormwater, the regulations that might affect your farm, and the characteristics of your farm. Once you have reviewed those and prepared a map of your farm's existing conditions (see Checklist 3A), you should add information to the map to develop your Hobby Farm Stormwater Plan as described below.

Required regulatory buffers and setbacks

You should review the “base map” of existing conditions you prepared as described in Fact Sheet 3.1 and Checklist 3A and make sure you have shown all regulated water resources on or near your property and related buffer zones and setbacks. Please make sure you understand what activities may occur within the buffer zones and setbacks - if you are not sure, please re-visit the municipal offices and staff described in Fact Sheets 2.4 and 2.5 to make sure you understand how state and local regulations affect your Hobby Farm.

Preliminary layout of farming activities and supporting facilities

Use your base map, together with your knowledge of the buffer zone and setback requirements, to designate locations and the general layout of the activities you want to include in your Hobby Farm. You should sketch proposed features on your map to answer the following questions.

Keep in mind that your initial sketch may need to be modified as you consider other mapping steps outlined below - so this first plan is a preliminary sketch of how your hobby farm will be organized or improved.



Cultivated Areas

- What areas will you plant (row crops, vineyards, orchards, etc.)?
- How do you plan to provide water for growing crops? If you plan an irrigation system, where is the water supply?
- How will water be conveyed from the supply to your crops?

Animal and Livestock Facilities

- What areas will you use as pastures for livestock or other animals?
- Where will you provide shelter?
- How will you provide water?
- Where will you store or compost manure?

Buildings

- Will you use existing buildings to support your farming activities? Will this use require changes to the building to make it suitable for this purpose?
- Do you propose new buildings, and where should they be located?

Storage and Service Areas

- Where will you store and service equipment used for your farm?
- Where will you store and prepare general supplies, fertilizers, other agricultural chemicals (herbicides, pesticides, etc.)?

Utilities

- How will you supply water?
- How will you collect and treat wastewater?
- Where will you need electrical power and other cable utilities (e.g., telephone, TV cable, internet)?
- Will you need a natural gas pipeline extension or other gas supply?

Solid Waste

- How will you collect, store, and dispose of solid waste (e.g. trash) from your hobby farm?
- Will you compost material on your hobby farm?
- How will you manage manure on your site?

Access

- How will you provide access for all of the facilities and activities that you have mapped?
- Which of your access ways will be paved?
- For access ways that are not paved, how will they be surfaced to adequately support proposed equipment and to prevent erosion?

NEXT STEPS

Once you have a preliminary layout of your farm activities and facilities, the next step in planning a Stormwater-Friendly Hobby Farm involves the selection of Best Management and good housekeeping practices to help you prevent stormwater impacts from your farm activities. As you select these practices and add them to your plan, you may need to refine the location and the space occupied by your farm activities so that farming and stormwater management fit together on your site. Doing this will help you become a hobby farmer with water quality in mind.



MAP OF HOBBY FARM ACTIVITIES

AFTER REVIEWING APPLICABLE REGULATIONS AND REQUIREMENTS FOR THE TYPE OF HOBBY FARMING YOU WOULD LIKE TO DO, ADD THE FOLLOWING COMPONENTS TO YOUR EXISTING SITE MAP:

Draw the approximate property boundaries.

- Indicate where you will plant crops.
- Indicate the source of water for crops.
- Indicate where chemicals, fertilizers, and fuel are/will be located.
- Indicate where livestock are/will be housed.
- Show manure storage areas.
- Indicate areas to be used as pasture for livestock and number of paddocks for rotational grazing.
- Indicate where composting will occur.
- Show proposed access ways to all farm areas.
- Indicate where machinery is/will be located.

