



Memo

To: Agricultural and Preservation Partners
From: Jeffrey C. Everett, Deputy Executive Director, State Ag. Development Committee
Date: 4/19/2021
Re: Draft Soil Protection Standards - Request for Informal Comments

Since June of 2019, the full State Agriculture Development Committee (hereafter “SADC” or “the Committee”) and a Deed of Easement Subcommittee have been working on a draft regulation that establishes soil protection standards for preserved farms. The job is not complete, but the basic concepts and a number of key details have been extensively deliberated. At its February 25, 2021, meeting the Committee directed staff to develop a plain language explanation of the draft rule, to circulate it among the Committee’s various partners and to invite their questions and informal comments. Before delving into the details of a draft regulation, however, it is prudent to briefly explain why a rule establishing soil protection standards is necessary, describe the concepts behind the proposed rule, and clarify that the present course of action is the result of a New Jersey Supreme Court decision that concerned a preserved farm.

A number of years ago, the SADC was involved in a court case that centered on the question of how much of a preserved farm can be “disturbed” in order to build farm structures. The case went all the way to the New Jersey Supreme Court where the Court ruled what the farmer had done violated the Farmland Preservation Program restrictions. It also gave the Committee some very clear guidance about what the conceptual underpinnings of soil protection standards must be. The Court said,

“... the ARDA (Agriculture Retention and Development Act) and the (deed of easement) have a dual purpose: to strengthen the agricultural industry and to preserve farmland. Both are important goals; neither is subordinate to the other... **the approach must be to balance farmland preservation and strengthen the agricultural industry.**”

In its decision, the Court also stated,

“If the SADC fails to undertake the necessary rulemaking to establish the extent of soil disturbance that is permissible on preserved farms, then it can expect administrative due process challenges to its enforcement actions . . . those who own deed-restricted farmland must have well delineated guidelines or rules that will permit them to make informed decisions about the permissible limits of their activities.

The state has yet to promulgate such guidelines or rules....
Farmers must know where the goalposts are set before
the State burdens them with costly enforcement actions.”

Therefore, in an effort to strike an appropriate balance between soil conservation and promoting the business of agriculture, the SADC conducted a study of its own and commissioned multiple studies of preserved and unpreserved New Jersey farms. Based on those studies, the SADC has developed a framework of proposed soil protection standards. That framework will allow preserved farms, almost without exception, to operate the way they are operating today while allowing room for future infrastructure growth and, at the same time, sets clear limits on disturbances to the soil resource.

The broad outlines of the proposed regulation are detailed in the attached chart that is color-coded Red, Orange, Yellow, and Green. But before explaining the specifics of the proposed disturbance limits, two points need to be made about what they **WILL** and **WILL NOT** apply to.

1. The proposed regulations will apply to all farms regardless of when the farm was preserved. Farms that entered the program before the regulations are adopted will be bound by them to the same extent as farms preserved after their adoption.
2. Exception areas will be completely exempt from the proposed regulation; the proposed soil disturbance limits will apply only to land subject to the deed of easement. In other words, soil disturbance on exception areas will not be included in calculating soil disturbance on preserved land.

THE PROPOSED REGULATION

The proposed regulation tells the owners of preserved land how much soil they can disturb without violating the farmland preservation deed of easement. The basic provisions of the rule are:

1. **Basic Disturbance Allowance (“RED” uses) - Up to eight percent (8%) of the acreage on a preserved farm or six acres (6), whichever is greater,** may be disturbed for the kinds of uses and activities that cause the most permanent and significant damage to the soil, things like paved travel lanes, paved parking lots, and storage areas, stormwater basins and permanent buildings (shown in RED in the attached chart). The eight percent (8%) or six-acre (6) disturbance limit includes and applies to both existing and any proposed, new infrastructure and improvements.
2. **Best Management Practices (BMPs) - In addition to the 8%/6-acre limitation** for RED land uses, additional allowance is provided for certain more reversible activities **as long as they are designed, constructed and maintained in accordance with prescribed Best Management Practices (BMPs).**

A. BMP Overview:

- If a landowner conducts the types of agricultural activities that are addressed in the BMPs, but does not follow the standards contained in the BMPs, **then the activities count as “RED” uses and are subject to the 8%/6 acre basic disturbance allowance discussed above.**
- The most important thing to understand about the BMPs is that the proposed regulations do not require any farmer to follow a single one of them as long as the farm continues to comply with the 8%/6-acre limits and/or unless a landowner

wants to ensure certain activities will not count towards the RED limits. Otherwise, adherence to the BMPs is completely voluntary.

- Most of the uses, buildings and structures covered by the BMPs require maintenance. Proper maintenance will be checked by the easement holder during annual monitoring inspections.
- The most current versions of eleven (11) draft BMPs, which have been vetted by both the Deed of Easement Subcommittee and the full SADC, are attached for review. It is important to note that these can be updated in the future as agronomic practices change.

B. BMPs for Semi-permanent Activities (“ORANGE” uses): The proposed regulation will permit an **additional five percent (5%)** of the preserved land to be disturbed to accommodate five (5) common semi-permanent farm improvements (shown in ORANGE in the attached chart) **PROVIDED** they are designed, built and maintained according to the BMPs.

- These improvements have the potential to do significant damage to the soil, but if designed, built and maintained in compliance with the BMPs, will not permanently damage it.
- The area of soil disturbance caused by any **existing or future ORANGE** use, building or structure not built in compliance with the applicable BMP will count toward the eight percent (8%), six-acre (6) disturbance limits.
- Certification by the SADC is required before the practices are installed to ensure they meet the BMP’s certifications.

C. BMPs for Temporary Activities (“YELLOW” uses): The proposed regulation will permit an **unlimited amount** of the preserved land to be disturbed to accommodate six (6) common temporary farm improvements (shown in YELLOW in the attached chart) that involve minimal and minimally harmful soil disturbance **PROVIDED** they are designed, built and maintained in compliance with the applicable BMPs.

- An **unlimited amount** of these uses, buildings and structures is permitted.
- The area of soil disturbance caused by any **future YELLOW** use, building or structure not built in compliance with the applicable BMP will count toward the eight percent (8%), six-acre (6) disturbance limits. Pre-existing uses, buildings, and structures in this category are exempt from the disturbance limit and certification process.
- Certification by the SADC is required before future practices are installed to ensure they meet the BMP’s certifications.

3. Normal Farming Activities (“GREEN” uses) - Finally, uses that involve growing crops, grazing livestock, or managing woodland along with other natural resources uses and conservation practices (shown in GREEN in the attached chart) are not considered soil disturbance and therefore are unlimited and unregulated insofar as a soil disturbance limit is concerned.

OBJECTIVES OF THE DRAFT PROPOSAL AND NEXT STEPS

Additional details such as how soil disturbance limits will be treated when an owner seeks to divide a preserved farm, how activities that are not contemplated in the land use chart are to be handled, how to address farms at or over the soil disturbance limit at the time that the rules are adopted, etc.¹, will be fleshed out once the proposed limits and associated BMPs have been distributed and informally commented on by the SADC's partners. Again, please note that the overarching objectives of this whole endeavor are to:

- Provide clear standards for farmers and farmland owners as to how much preserved farmland can be disturbed, while staying compliant with the deed of easement.
- Ensure that any proposed standards are realistic in light of the unique nature of New Jersey agriculture and that ample opportunities are provided for future growth. The intent in providing ample future growth is so that farmers can operate without having to constantly seek permission for each and every activity they engage in.
- Protect the soil resources of preserved farms so that they can continue to support agricultural operations far into the future.

To consider input from partners before the promulgation of these proposed rules in the New Jersey Register, the Committee is inviting interested parties to comment informally before the formal Register process commences. **To that end, please submit your written comments within a 60-day review period that concludes June 18, 2021,** by electronic mail (strongly encouraged) to sadc@ag.nj.gov or if necessary, by U.S. Mail at the following address:

State Agriculture Development Committee
Attn: Soil Protection Standards Comments
PO Box 330
Trenton, NJ 08625-0330

With those comments in hand, we will return to the full Committee to finalize the details before a proposed rule is sent to the Register, tentatively this summer with adoption slated for fall. In the interim, please do not hesitate to contact me at the above addresses or by phone at 609-984-2504. Thank you for your attention to this matter.

Distribution list:

State Agriculture Development Committee – Members
State Board of Agriculture – Members
County Boards of Agriculture – Presidents
County Agriculture Development Boards – Administrators
New Jersey Department of Agriculture – Division Directors
Rutgers Cooperative Extension
New Jersey Farm Bureau
Farm Credit East
Northeast Organic Farming Association of New Jersey
USDA Farm Service Agency

¹ The Committee has contemplated providing an additional 2% of the preserved premises or 2 acres, whichever is greater, for these non-compliant farms.

USDA Natural Resources Conservation Service
USDA Rural Development
Soil Conservation Districts
North Jersey Resource Conservation & Development
South Jersey Resource Conservation & Development
Municipal PIG Program Contacts
Land Trusts

STATE AGRICULTURE DEVELOPMENT COMMITTEE
Soil Disturbance/Soil Protection Land Uses Chart

↓ Degree of Reversibility		Land Uses	Soil Effects Classifications	Soil Disturbance Limitations ³	Soil Disturbance Exemptions ⁴
	SOIL PROTECTION STANDARDS - GENERAL	Cut/fill activities (includes stormwater basins)	Permanent Soil Disturbance ("Red" Category)	Up to 8% of the preserved premises acres or 6 acres, whichever is greater.	All pre-existing and future land uses subject to Soil Disturbance Limitation.
		Permanent buildings/structures			
		Permanent travel lanes			
		Permanent livestock training areas			
Permanent parking and storage areas/hardscape					
SOIL PROTECTION STANDARDS - BEST MANAGEMENT PRACTICES (BMPs)	Semi-permanent travel lanes	Semi-Permanent Soil Disturbance ("Orange" Category)	Up to 5% of the preserved premises acres if following BMPs; subject to "Red" Category Limitation if not following BMPs.	All pre-existing and future land uses subject to Soil Disturbance Limitation.	
	Semi-permanent livestock training areas				
	Semi-permanent parking and storage areas				
	Agricultural water impoundments				
	Soil stockpiles				
Geotextiles and geomembranes	Temporary Soil Disturbance ("Yellow" Category)	No limitation if following BMPs; subject to "Red" Category Limitation is not following BMPs.	All pre-existing land uses exempted from Soil Disturbance Limitation; all future land uses subject to Soil Disturbance Limitation.		
Temporary structures					
Temporary travel lanes					
Temporary livestock training areas					
Temporary parking and storage areas					
Ground-mounted solar energy facilities					
SOIL PROTECTION STANDARDS - GENERAL	Cropland and pastureland	Soil Protection ("Green" Category)	No limitation.	All pre-existing and future land uses exempt from Soil Disturbance Limitation.	
	Woodland				
	Wetlands and streams				

¹ Any land use not enumerated in this chart will be evaluated on a case-by-case basis. Additional BMPs can be developed as needed and existing BMPs can be updated as agronomic practices and soil science evolves.

² Acreage classified in the Red and Orange categories can be reduced by following SADC-approved soil rehabilitation standards. Land included within exception areas is not subject to the limitations set forth herein.

³ Compliance with BMPs is voluntary on the part of the landowner. However, not adhering to the BMPs will cause the acreage of a particular land use to count towards the Red Category Limitation.

⁴ Certain land uses, such as pre-existing livestock ponds or cranberry bogs, are considered exempt from the Soil Disturbance Limitations and corresponding details will be articulated in the General Standards.

Best Management Practice (BMP) for Agricultural Water Impoundments (“ORANGE” LAND USE)

DRAFT: 2/26/2021

Purpose:

To provide guidance on the design, site selection, construction, and maintenance of agricultural water impoundments on the preserved premises.

Definitions:

“Agricultural water impoundment” means an excavated, unlined farm pond or dammed impoundment fed by surface water or groundwater designed and sized for irrigating agricultural crops or watering livestock that is constructed after the date of adoption of this BMP. Any associated berms or dams are not considered part of the impoundment. Agricultural water impoundments do not include decorative or recreational ponds, wildlife ponds, stormwater management facilities, aquaculture ponds, manure lagoons, tailwater recovery ponds, ponds constructed primarily for hydropower uses, or naturally occurring ponds and wetlands. Agricultural water impoundments otherwise meeting the definition but constructed prior to the adoption of the soil protection rules will not be counted towards soil disturbance limits.

“Conservation Plan” means a farm conservation plan written and approved by NRCS or a Technical Service Provider who is a Certified Conservation Planner through NRCS. Conservation plans are approved by the SCD. It is a site-specific plan that prescribes land treatment and related conservation and natural resources management measures that are deemed to be necessary, practical and reasonable for the conservation, protection and development of natural resources, the maintenance and enhancement of agricultural or horticultural productivity, and the control and prevention of non-point source pollution.

“Ground protection mats” means specifically designed construction mats consisting of wood, plastic, or metal that distribute heavy loads over a larger area to prevent soil compaction. Plywood is not acceptable to use as a ground protection mat.

“Normal Tillage” means generally accepted agricultural practices for seedbed preparation and cultivation of soil including moldboard plowing, disking, chisel plowing, and the use of similar site preparation practices as determined by the Committee. Normal tillage is limited to the depth of the surface layer, designated as the plow layer, which is the Ap soil horizon.

“Soil Compaction” means any activity other than normal tillage that results in an increase in soil bulk density or consolidation or reduces a soil’s capacity to infiltrate water including, but not limited to, preparing or using land for the placement of engineered structures, footings, foundations, earth-retaining structures, parking areas, or roadways through static force, tamping, vibration, kneading, and rolling techniques unless specifically identified by the Committee as an exempt agricultural practice.

Where Practice Applies:

To the design and construction of new agricultural water impoundments implemented as part of an approved conservation plan. Existing agricultural water impoundments are exempt from all requirements set forth in this BMP except for maintenance; agricultural water impoundments constructed after adoption of the Rules are “orange” if the BMP is followed.

Design Criteria to Qualify for BMP Certification:

1. The construction and use of agricultural water impoundments shall be in accordance with a farm conservation plan approved by the local soil conservation district and otherwise be compliant with the Deed of Easement and applicable state regulations including but not limited to rules promulgated by the New Jersey Department of Environmental Protection.
2. Agricultural water impoundments shall obtain all necessary permits and approvals from state, and federal agencies prior to commencing work. This includes, but is not limited to, a soil erosion and sediment control plan from the local Soil Conservation District prior to construction when more than 5,000 square feet of the surface area of land is disturbed during installation and/or a permit from NJ Bureau of Dam Safety if a dam is being utilized.
3. Agricultural water impoundments shall be constructed and used primarily to service the agricultural needs of the farm.
 - a. In addition to a conservation plan required of all preserved farms, construction of a new agricultural water impoundment shall have the agricultural need justified through written documentation from a Rutgers Cooperative Extension specialist.
 - b. An alternatives analysis shall be supplied by NRCS or a licensed professional engineer stating what other options were considered and how the agricultural operation will benefit from the project. Alternatives to an irrigation pond shall include a well.
 - c. The need justification shall also include a calculation of current volume requirements and future predicted requirements.
4. A scaled plan-view map shall be prepared and submitted to SADC showing the layout of all proposed and existing areas of soil disturbance, designating any previously certified SADC limitation class areas and including the proposed extents of the maximum water level of the agricultural water impoundment and the proposed extents of land grading.
5. Only the footprint of the agricultural water impoundment is covered under this BMP. Stockpiles shall follow the Soil Stockpiling BMP and dams/berms shall be considered Permanent Soil Disturbance (Red Category).
6. All relevant construction details shall be supplied with the plan including but not limited to: a site access plan, notes about limiting soil compaction during construction, and a plan and profile view of the proposed impoundment.
7. Construction shall not begin until the plans have been approved by the SADC.
8. Embankments and excavated ponds shall be designed in compliance with appropriate NRCS Conservation Practice Standard 378 Ponds.
9. Construction lanes for the Agricultural water impoundment may follow the BMPs for Unimproved Travel lanes or Improved Travel Lanes.
10. The soil surrounding the Agricultural water impoundment shall be protected from compaction:
 - a. Equipment shall employ use of low ground pressure equipment and/or ground protection mats.
 - b. Livestock access shall be limited to designed crossings or access points to minimize impacts to the surrounding soil.
11. Agricultural water impoundments shall be sized to minimize disturbance while meeting the agronomic needs identified.

Maintenance:

1. All agricultural water impoundments, both preexisting at the time of adoption of this BMP and new, shall be maintained to prevent excessive sedimentation in the water.

- a. Accumulated sediment may be removed for periodic maintenance, but the original surface area of the impoundment shall not be increased.
 - b. The use of dredge spoils on the farm or removal from the property shall be in compliance with the Deed of Easement, state, and federal regulations.
 - c. Maintenance shall not be used to increase the surface area of the impoundment beyond the approved design.
2. Erosion in and around agricultural water impoundments shall be addressed as soon as possible.
 3. Soil stockpiles shall be maintained according to the Soil Stockpiling BMP.

Rehabilitation:

If removal and rehabilitation of an agricultural water impoundment is desired, the stockpiled soil shall be used and a specialized rehabilitation plan shall be submitted to SADC for review and approval.

DRAFT

Best Management Practice for Geotextiles and Geomembranes (“YELLOW” LAND USE)

DRAFT: 2/26/2021

Purpose:

To provide standards for the installation, use, and removal of geotextile fabrics and geomembranes on the preserved premises.

Definitions:

“Agricultural water impoundment” means an excavated, unlined farm pond or dammed impoundment fed by surface water or groundwater designed and sized for irrigating agricultural crops or watering livestock that is constructed after the date of adoption of this BMP. Any associated berms or dams are not considered part of the impoundment. Agricultural water impoundments do not include decorative or recreational ponds, wildlife ponds, stormwater management facilities, aquaculture ponds, manure lagoons, tailwater recovery ponds, ponds constructed primarily for hydropower uses, or naturally occurring ponds and wetlands. Agricultural water impoundments otherwise meeting the definition but constructed prior to the adoption of the soil protection rules will not be counted towards soil disturbance limits.

“Conservation Plan” means a farm conservation plan written and approved by NRCS or a Technical Service Provider who is a Certified Conservation Planner through NRCS. Conservation plans are approved by the SCD. It is a site-specific plan that prescribes land treatment and related conservation and natural resources management measures that are deemed to be necessary, practical and reasonable for the conservation, protection and development of natural resources, the maintenance and enhancement of agricultural or horticultural productivity, and the control and prevention of non-point source pollution.

“Geomembrane” means an impermeable plastic film used for a variety of agricultural uses including but not limited to plastic mulch and silage wraps. Plastics used to cover hoop houses are detailed in the Temporary Structures BMP.

“Geotextile Fabrics” means permeable, woven and non-woven plastic fabrics, typically used for separation of soil layers, erosion control and weed management. Biodegradable or paper fabrics are not included in this definition.

“Normal Tillage” means generally accepted agricultural practices for seedbed preparation and cultivation of soil including moldboard plowing, disking, chisel plowing, and the use of similar site preparation practices as determined by the Committee. Normal tillage is limited to the depth of the surface layer, designated as the plow layer, which is the Ap soil horizon.

“Permeable” means a material or surface treatment that allows the passage of water into the soil at a rate equal to or greater than the surrounding surface soils, or that allows the passage of water into the soil at a rate equal to or greater than the saturated hydraulic conductivity for the soil type identified in the soil survey.

“Plastic Mulch” means a disposable thin layer (typically 3 mm or less) of impermeable plastic stretched over prepared soil beds used in the propagation of field crops to improve growing conditions.

“Pond Liner” means an impermeable geomembrane used in the construction of irrigation ponds, tailwater recovery systems, and manure storage facilities.

“Silage Wraps” means an impermeable disposable plastic used in the storage of silage either in rolls or in bunkers.

“Soil Compaction” means any activity other than normal tillage that results in an increase in soil bulk density or consolidation or reduces a soil’s capacity to infiltrate water including, but not limited to, preparing or using land for the placement of engineered structures, footings, foundations, earth-retaining structures, parking areas, or roadways through static force, tamping, vibration, kneading, and rolling techniques unless specifically identified by the Committee as an exempt agricultural practice.

“Soil Loss Tolerance Rate (T)” means the maximum rate of annual soil loss that will permit crop productivity to be sustained economically and indefinitely on a given soil (*source: American Society of Agronomy, Soil Science Society of America, Special Publication Number 45*).

“Soil Survey” means soil data and information produced by the National Cooperative Soil Survey. It is operated by the USDA Natural Resources Conservation Service (NRCS).

“Topsoil” means the uppermost layer in a natural soil profile where root growth, biological activity, and organic matter are concentrated. Topsoil is composed of organic material, mineral particles (sand, silt, and clay) air, and water. For these standards topsoil includes the O, A, and E soil horizons. It may also be called the “plow layer”, “surface soil”, “Ap layer”, “Ap horizon”, or “surface layer”. Topsoil depth is site specific, but typically varies between 8 and 12 inches.

“Weed Fabric” means a vernacular term for geotextile.

Where Practice Applies: To any geotextile fabric or geomembrane used on a preserved farm. Common applications include but are not limited to plastic mulch, weed barriers, and silage covers. Plastic used to cover hoop houses is included in the Temporary Structures BMP.

Design Standards to Qualify for BMP Certification:

The use of geotextiles and geomembranes shall be in accordance with a farm conservation plan approved by the local soil conservation district and otherwise be compliant with the deed of easement and applicable state and federal regulations.

1. Permeable geotextiles (e.g. weed fabric for nursery production)
 - a. Must be readily permeable to water.
 - b. Shall be placed over native soil with topsoil in place. If removal of topsoil is desired, the Semi-permanent Parking and Storage Areas BMP, Semi-permanent Livestock Training Areas BMP, or Semi-permanent Travel Lane BMP may be followed.
 - c. Soil compaction outside of normal tillage practices is not permissible before, during, or after installation.
 - d. Soil erosion from the entire field shall be maintained below the tolerable soil loss tolerance, “T”. Any erosion beneath or adjacent to the fabric shall be addressed promptly.
 - e. Use of gravels or other materials above or below geotextiles are subject to the ‘semi-permanent’ BMPs.

- f. Lanes between production areas shall follow the BMPs for Semi-permanent Travel Lanes or Temporary Travel Lanes.
2. Impermeable temporary geomembrane (e.g. plastic mulch for vegetable production, silage wraps and covers, or tarps)
 - a. Shall be fully removed at the end of its useful life.
 - b. Shall be installed in an orientation that minimizes erosive flow.
 - c. Soil erosion from the entire field shall be maintained below the tolerable soil loss tolerance, "T".
 - d. If soil erosion is above tolerable levels, conservation measures shall be implemented to reduce the soil loss to "T" including but not limited to: vegetative treatment areas, reduction in row length, increase in vegetative cover between rows, or other conservation practices recommended as part of an NRCS conservation plan.
3. Impermeable long-term use geomembrane (e.g. pond liners)
 - a. Construction of irrigation ponds shall reference the Agricultural Water Impoundment BMP.
 - b. Tailwater recovery systems and manure storage lagoons shall follow the limits set forth in the Soil Protection Rules.
 - c. Other installations of long-term geomembranes shall be evaluated by the SADC on a case-by-case basis to determine BMP eligibility.

Maintenance:

1. Erosion beneath the fabric must be minimized and addressed.
2. At the end of its useful life, all geotextile or geomembrane must be removed from the soil and properly disposed of.

Rehabilitation:

If rehabilitation of the area is desired, the rehabilitation standards set forth in the Soil Protection Standards shall be followed.

Best Management Practice (BMP) for Ground Mounted Solar Energy Facilities (“YELLOW” LAND USE)

DRAFT: 2/26/2021

Purpose:

To provide standards for the design, site selection, construction, and maintenance of ground mounted solar energy facilities (SEF) on the preserved premises. Solar panels and solar arrays installed according to this BMP shall be considered Temporary Disturbance (Yellow Category) for the purposes of the Soil Protection Standards.¹ The land under and between the solar panels will not count towards the soil disturbance limitation if this BMP is followed. Nothing in this BMP will abrogate, supersede, or replace the solar energy generation rules at N.J.A.C. 2:76- 24.1 et seq. Construction of solar arrays that does not follow this BMP counts towards the disturbance limits set forth in the Soil Protection Standards.

Definitions:

“Conservation Plan” means a farm conservation plan written and approved by NRCS or a Technical Service Provider who is a Certified Conservation Planner through NRCS. Conservation plans are approved by the SCD. It is a site-specific plan that prescribes land treatment and related conservation and natural resources management measures that are deemed to be necessary, practical and reasonable for the conservation, protection and development of natural resources, the maintenance and enhancement of agricultural or horticultural productivity, and the control and prevention of non-point source pollution.

“Dense Vegetative Cover” means an area that maintains more than 70% vegetative cover, or greater than 90% crop residue.

“Field moisture capacity” means the amount of water retained in a soil after it has been saturated and has drained freely. It is usually expressed as a percentage of the oven dry weight of the soil.

“Ground protection mats” means specifically designed construction mats consisting of wood, plastic, or metal that distribute heavy loads over a larger area to prevent soil compaction. Plywood is not acceptable to use as a ground protection mat.

“Low Ground Pressure Equipment” means construction equipment specifically designed to spread the weight of the equipment over a larger area with tracks or other design features. Examples include a tracked excavator or tracked skid steer.

“Normal Tillage” means generally accepted agricultural practices for seedbed preparation and cultivation of soil including moldboard plowing, disking, chisel plowing, and the use of similar site preparation practices as determined by the Committee. Normal tillage is limited to the depth of the surface layer, designated as the plow layer, which is the Ap soil horizon.

“Soil Compaction” means any activity other than normal tillage that results in an increase in soil bulk density or consolidation or reduces a soil’s capacity to infiltrate water including, but not limited to, preparing or using land for the placement of engineered structures, footings, foundations, earth-

¹ Other BMPs may govern portions of solar panel installations. The most restrictive standards shall be followed for all applicable portions of the solar array, and the appropriate color designation applied to those portions of the site.

retaining structures, parking areas, or roadways through static force, tamping, vibration, kneading, and rolling techniques unless specifically identified by the Committee as an exempt agricultural practice.

“Solar-related disturbance area” means the total contiguous or noncontiguous area(s) supporting the solar energy facilities and related infrastructure. The total area calculation shall include all areas of land that are devoted to or support the solar energy facilities; any areas of land no longer available for agricultural or horticultural production due to the presence of the solar energy facilities; any areas of the farm used for underground piping or wiring to transmit solar energy or heat where the piping or wiring is less than three feet from the surface. It does not include building mounted solar energy facilities, any other buildings or site amenities deemed necessary for the production of solar energy on the farm, or any areas supporting wind or biomass energy generation facilities. Non-farm roadways including access roads shall follow the appropriate travel lane BMP or soil disturbance limits.

"Solar energy" means electricity or heat that is generated through a system that employs solar radiation.

"Solar energy facilities (SEF) means distinct solar energy systems that require their own dedicated inverter, electrical distribution, transmission wiring system, and all other associated components including, but not limited to, solar panels and films, arrays, collectors, piping, footings, supports, mounting and stabilization devices, pumps, transformers, utility poles, and other on-farm equipment, structures, and infrastructure necessary to operate and maintain the system for the generation of power or heat.

“Soil Loss Tolerance Rate (T)” means the maximum rate of annual soil loss that will permit crop productivity to be sustained economically and indefinitely on a given soil (*source: American Society of Agronomy, Soil Science Society of America, Special Publication Number 45*).

“Subsoil” means the layer of soil beneath the topsoil where there is visibly less organic matter and root development than the topsoil layer, typically noticed by a change in soil color. For these standards, subsoil is considered the B soil horizon.

“Topsoil” means the uppermost layer in a natural soil profile where root growth, biological activity, and organic matter are concentrated. Topsoil is composed of organic material, mineral particles (sand, silt, and clay) air, and water. For these standards topsoil includes the O, A, and E soil horizons. It may also be called the “plow layer”, “surface soil”, “Ap layer”, “Ap horizon”, or “surface layer”. Topsoil depth is site specific, but typically varies between 8 and 12 inches.

Where Practice Applies:

Proposed SEF on a preserved premises that are designed, constructed, and approved pursuant to N.J.S.A. 2:76- 24.1 et seq. Only ground mounted SEFs are eligible for BMP certification. SEFs placed on buildings or above other disturbed areas (e.g. parking areas) are not eligible for certification and shall be treated as a part of the underlying structure for the purposes of the Soil Protection Standards.

Design Criteria to Qualify for BMP Certification:

General Considerations:

1. To qualify for BMP certification, the SEF must be approved pursuant to N.J.A.C. 2:76- 24.1 et seq. prior to construction. If built prior to approval, as-built designs and a site visit by SADC are required. At their sole discretion, the SADC may determine if an installation is compliant with

the BMP or may recommend modifications to bring the installation into compliance with the BMP.

2. The use of the SEF shall be compliant with the Deed of Easement.
3. SEFs shall be designed in a manner to minimize the solar-related disturbance area.
4. Low ground pressure equipment and/or ground protection mats shall be used during construction.
5. All construction activities shall be completed while soil moisture is at or below field moisture capacity.
6. Mechanical soil compaction (e.g. with a sheep-foot compactor or vibratory compactor, or similar) prior to and during installation is not compliant with the BMP.
7. All underground utilities (electrical service, conduit, or similar) shall be buried a minimum of 40 inches or 6 inches below the top of bedrock, whichever is less, or compliant with the depths required by building code, if greater.
 - a. To the maximum extent practicable, underground utilities shall be buried using a trenching machine.
 - b. If use of a trenching machine is not feasible, an open (excavated) ditch may be used and should be the minimum width necessary to install the utility. The following conditions apply when underground utilities are installed using an open ditch;
 1. Topsoil and subsoil shall be removed and stored according to the Soil Stockpiling BMP
 2. Topsoil shall not be used as bedding beneath buried utility pipe.
 3. After installation, topsoil shall be replaced to an equivalent depth as existed before installation. Excess subsoil may be removed from the premises or reused on site.
8. After heavy construction is complete, the SEF shall be seeded to a permanent vegetative cover that is compliant with the Standards for Soil Erosion and Sediment Control in New Jersey, or compliant with a farm conservation plan approved by the Soil Conservation District.
9. The land within the SEF may be utilized for crop production, pasture/grazing, or other soil-based agriculture when part of a farm conservation plan approved by the Soil Conservation District.
10. Soil loss shall be maintained at or below the Soil Loss Tolerance Rate "T" from the solar-related disturbance area.
11. The footprint for all concrete pads required for mounting transformers, meters, or other electrical transfer devices (excluding footings required in Additional Requirements (3), below) are not eligible for certification as part of this BMP.

Additional Requirements:

1. For SEF mounted to the ground by a screw, piling, or similar system that does not require a footing, concrete, or other permanent mounting there are no additional installation requirements.
2. For SEF mounted using ballast such as gravel contained within structures, concrete block, or similar materials for the purpose of providing ballast for mounting the SEF:
 - a. Ballast structures shall be designed to minimize the overall footprint of the ballast area.

- b. All topsoil shall be stripped from the footprint of the ballast structure, concrete block, or similar material and stockpiled according to the Soil Stockpiling BMP.
 - c. If necessary for installation, subsoil shall be removed and stockpiled according to the Soil Stockpiling BMP.
 - d. No intentional compaction of topsoil or subsoil is permitted within the ballast area.
3. For SEF mounted using permanent mounting techniques with written justification from a licensed professional engineer, such as footings or concrete:
 - a. Footings shall be minimized to the maximum extent practicable.
 - b. When footings occupy less than 1 percent of the overall solar-related disturbance area, permanent mounting techniques shall be treated as ballast structures.
 - c. When footings occupy greater than 1 percent of the overall solar-related disturbance area:
 - i. The total footprint of permanent mountings only shall not be eligible for BMP certification.
 - ii. The remainder of the SEF shall follow the general considerations and maintain BMP eligibility.

Maintenance:

1. Dense vegetative cover shall be maintained to minimize runoff and erosion.
2. Erosion from within the SEF shall be addressed promptly.

Rehabilitation:

1. At the end of its useful life, all infrastructure associated with SEF must be removed from the soil and properly disposed of. All permanent footings, concrete structures, conduits, and underground utilities shall be removed to a minimum depth of 30 inches. Infrastructure buried deeper than 30 inches may be left in place.
2. All removal must be completed when soil moisture is at or below field moisture capacity.
3. Low-ground-pressure equipment and/or ground protection mats shall be used during removal.
4. The rehabilitation standards set forth in the Soil Protection Rules shall be followed.

Best Management Practice (BMP) for Semi-permanent Livestock Training Areas (“ORANGE” LAND USE)

DRAFT: 02/26/2021

Purpose:

To provide design standards for the installation, maintenance, and restoration of Semi-permanent Livestock Training Areas to support current and future proposed agricultural uses while minimizing potential negative impacts on the soil. The intent is to manage soil resources in a way that results in a functional, durable surface that reduces erosion potential, minimizes soil compaction, protects the integrity of the topsoil, and allows infiltration. In addition, the standard ensures that the areas can be readily removed and restored to pre-installation conditions with only the use of standard agricultural equipment.

Definitions:

“Coarse mulch” means wood chip mulch consisting of shredded leaves, bark, and wood particles ranging from 1 to 4 inches in length, with at least 50% of the mulch having a length of 2 inches or greater.

“Field moisture capacity” means the amount of water retained in a soil after it has been saturated and has drained freely. It is usually expressed as a percentage of the oven dry weight of the soil.

“Geotextile Fabrics” means permeable, woven and non-woven plastic fabrics, typically used for separation of soil layers, erosion control and weed management. Biodegradable or paper fabrics are not included in this definition.

“Ground protection mats” means specifically designed construction mats consisting of wood, plastic, or metal that distribute heavy loads over a larger area to prevent soil compaction. Plywood is not acceptable to use as a ground protection mat.

“Livestock training area” means a discrete, uncovered, outdoor space used for riding, racing, training, showing, and rehabilitating horses or other livestock. Livestock training areas include but are not limited to arenas, tracks, and training rings. Pastures and drylots are not considered livestock training areas.

“Low Ground Pressure Equipment” means construction equipment specifically designed to spread the weight of the equipment over a larger area with tracks or other design features. Examples include a tracked excavator or tracked skid steer.

“Normal Tillage” means generally accepted agricultural practices for seedbed preparation and cultivation of soil including moldboard plowing, disking, chisel plowing, and the use of similar site preparation practices as determined by the Committee. Normal tillage is limited to the depth of the surface layer, designated as the plow layer, which is the Ap soil horizon.

“Permeable” means a material or surface treatment that allows the passage of water into the soil at a rate equal to or greater than the surrounding surface soils, or that allows the passage of water into the soil at a rate equal to or greater than the saturated hydraulic conductivity for the soil type identified in the soil survey.

“Semi-permanent livestock training area” means a livestock training facility that has had a surface added to it in accordance with the standard set forth herein.

“Soil Compaction” means any activity other than normal tillage that results in an increase in soil bulk density or consolidation or reduces a soil’s capacity to infiltrate water including, but not limited to, preparing or using land for the placement of engineered structures, footings, foundations, earth-retaining structures, parking areas, or roadways through static force, tamping, vibration, kneading, and rolling techniques unless specifically identified by the Committee as an exempt agricultural practice.

“Soil Conditioning Index (SCI)” means a Natural Resources Conservation Service (NRCS) tool that predicts the consequences of cropping systems and tillage practices on soil organic matter.

“Soil Loss Tolerance Rate (T)” means the maximum rate of annual soil loss that will permit crop productivity to be sustained economically and indefinitely on a given soil (*source: American Society of Agronomy, Soil Science Society of America, Special Publication Number 45*).

“Subsoil” means the layer of soil beneath the topsoil where there is visibly less organic matter and root development than the topsoil layer, typically noticed by a change in soil color. For these standards, subsoil is considered the B soil horizon.

“Topsoil” means the uppermost layer in a natural soil profile where root growth, biological activity, and organic matter are concentrated. Topsoil is composed of organic material, mineral particles (sand, silt, and clay) air, and water. For these standards topsoil includes the O, A, and E soil horizons. It may also be called the “plow layer”, “surface soil”, “Ap layer”, “Ap horizon”, or “surface layer”. Topsoil depth is site specific, but typically varies between 8 and 12 inches.

Where Practice Applies:

Livestock training areas on a preserved premises used for activities such as riding, racing, training, showing, and rehabilitating horses or other livestock that are constructed in accordance with the standards below.

Design Criteria to Qualify for BMP Certification:¹

1. The use of semi-permanent livestock training areas shall be compliant with the deed of easement and applicable local and state regulations.
2. In conformance with the NJ Soil Erosion and Sediment Control Act, semi-permanent livestock training areas shall obtain a Soil Erosion and Sediment Control plan from the local Soil Conservation District prior to construction when more than 5,000 square feet of the surface area of land is disturbed during installation
3. A scaled plan-view map² shall be prepared and submitted to SADC showing the layout of all proposed and existing areas of soil disturbance, designating their limitation class.

¹ Adapted from: Natural Resource Conservation Service Conservation Practice Standard, New Jersey, Heavy Use Area Protection, Code 561 (September 2014); University of Kentucky – College of Agriculture, Cooperative Extension Service, High Traffic Area Pads for Horses ID-64 (August 2007).

² Working out details on most appropriate scale.

4. Semi-permanent livestock training areas and all associated disturbances required for their successful implementation (soil stockpiles, drainage features, and stormwater basins, or similar disturbances) shall be considered part of the total disturbed area and must be accounted for in calculations in the Soil Protection Rules.
5. The total acreage of soil disturbance shall be included in the map with the size and location of proposed soil stockpile areas clearly designated.
6. All relevant construction details shall be supplied with the plan including but not limited to: notes about limiting soil compaction, a typical cross-section of the proposed livestock training area, and material specifications.
7. Construction shall not begin until the plans have been approved by the SADC and any other relevant local, state, or federal agencies.
8. To avoid adverse impacts to the premises, all new projects shall be constructed in compliance with the NJ Stormwater Best Management Practices Manual (https://www.state.nj.us/dep/stormwater/bmp_manual2.htm).
9. Prior to installation the entire topsoil layer shall be removed, stockpiled, and stabilized according to the Soil Stockpiling BMP. At no time shall topsoil be removed from the premises.
10. Semi-permanent livestock training areas shall follow the contour of the natural terrain. Nominal (less than three inches) smoothing of the subsoil may occur to facilitate geotextile placement but additional grading will be subject to the limits contained in the Soil Protection Rules.
11. When moving topsoil, care shall be taken to avoid overhandling and compaction.
12. Low ground pressure equipment and ground protection mats shall be used during construction.
13. No vehicular traffic shall be allowed on the subsoil during construction. All placement of surface material, grading, and other work necessary to construct the project shall take place from existing disturbed areas, or from temporary work areas utilizing ground protection mats.
14. All work shall be completed while soil moisture is at or below field moisture capacity.
15. Mechanical soil compaction (e.g. with a sheep-foot compactor or vibratory compactor, or similar) prior to and during installation is not eligible for BMP certification.
16. Improved areas shall be underlain with a woven or non-woven geotextile fabric designed to prevent base or surface material from becoming embedded into native soil. Fabric shall be permeable to water and must extend sufficiently beyond the gravel to ensure native soil/surface material separation. The fabric shall be installed per manufacturer's guidelines and in accordance with the Geotextiles and Geomembranes BMP.
17. Additional layers of pressure-distributing material (i.e. geogrids) may be added beneath the gravel layer.
18. At least six (6) inches of appropriate subbase shall be installed to properly distribute loads into the subsoil.
19. Additional surfacing above the subbase may be added as necessary.
20. Additional surfacing may include gravel, cinders, sand, soil, or a mix of synthetic material and soil. Appropriate edging should be installed around the perimeter of the facility to limit movement of material off the facility into the neighboring soil. The use of on-site topsoil for use as a surfacing material is not eligible for BMP certification.
21. The infiltration rate of the facility surface must be greater than or equal to the porosity of the underlying native soil.
22. The use of poured concrete, asphalt, asphalt millings, porous asphalt or porous concrete is not eligible for BMP certification.
23. Water may be used to control dust but shall be managed to avoid erosion.
24. Motor oil and salt shall never be used as dust-control agents.

25. Other commercially available dust-control products, when utilized for their intended purpose shall be confined to the riding surface and shall not be detrimental to soil health.

Maintenance:

1. During the life of the semi-permanent livestock training area, a separation shall be maintained between the surface material and the native subsoil using geotextiles or geomembranes in accordance with the Geotextiles and Geomembranes BMP.
2. There are no particular requirements to keep the surface free of sediment.
3. Care shall be taken to avoid contamination of the subsoil with high concentrations of fuel, agricultural chemicals, or other toxic substances that might affect future farming ability.
4. Erosion from runoff generated from the livestock training area shall be addressed promptly.
5. All requirements from the Soil Stockpiling BMP shall be followed.
6. Maintenance requirements shall be followed for any additional structures such as: stormwater basins, drainage swales, and similar water control devices installed as part of BMP certification.

Rehabilitation:

If rehabilitation of the area is desired, the rehabilitation standards set forth in the Soil Protection Standards shall be followed. Additionally, at the end of the useful life of the training area, all related materials shall be removed from the property, including but not limited to, geotextiles, subbase, surface materials, drainage features, and fencing.

Best Management Practice (BMP) for Semi-Permanent Parking and Storage Areas (“ORANGE” LAND USE)

DRAFT: 2/26/2021

Purpose:

To provide guidance for the use, maintenance, and restoration of semi-permanent vegetated parking and storage areas and the installation, maintenance, and removal of improved (surfaced) parking and storage areas on the preserved premises in a way that allows for current or proposed agricultural uses while minimizing the potential negative impacts on the soil. The intent is to manage soil resources in a way that results in a functional working area that reduces erosion potential, minimizes soil compaction, protects the integrity of the topsoil, and allows infiltration. In addition, the standard ensures that the areas can be readily removed and restored to pre-installation conditions with only the use of standard agricultural equipment.

Definitions:

“Actively cropped land” means land on portions of the premises that is available for agricultural use and production where the following apply: crops or forages are grown directly in the soil profile for a minimum of 150 consecutive days in one (1) calendar year or for two (2) periods of not less than 90 days each in one (1) calendar year; annual crops and hay are harvested or perennial crops (other than hay) maintained annually, and forages are consumed by direct grazing; cover crops grown as part of a production rotation and included in a farm conservation plan that may or may not be harvested. All grass and forage species shall be maintained at a length of 4 inches or greater.

“Arterial lane” means established travel lanes used by vehicles to access parking areas, which typically follow the peripheral edges of a parking area. These arterial lanes shall follow the Improved Travel Lane BMP or Unimproved Travel Lane BMP.

“Coarse mulch” means wood chip mulch consisting of shredded leaves, bark, and wood particles ranging from 1 to 4 inches in length, with at least 50% of the mulch having a length of 2 inches or greater. Saw dust is not considered coarse mulch.

“Collector Lane” means a lane within a parking area used to connect arterial lanes to parking stalls. These lanes are included as part of the parking area and shall follow the Parking Area standards.

“Conservation Plan” means a farm conservation plan written and approved by NRCS or a Technical Service Provider who is a Certified Conservation Planner through NRCS. Conservation plans are approved by the SCD. It is a site-specific plan that prescribes land treatment and related conservation and natural resources management measures that are deemed to be necessary, practical and reasonable for the conservation, protection and development of natural resources, the maintenance and enhancement of agricultural or horticultural productivity, and the control and prevention of non-point source pollution.

“Cover Crop” means an annual or perennial crop consisting of a specific plant or mix of plants that are planted and grown primarily to improve soil quality by reducing soil compaction and to reduce erosion.

Cover Crops shall be compliant with the USDA-NRCS FOTG Conservation practice standard for Cover Crop (340) and shall, at minimum, have as its purpose minimizing soil compaction.¹

“Dense Vegetative Cover” means an area that maintains more than 70% vegetative cover, or greater than 90% crop residue.

“Dripline” means the outermost circumference of a tree or perennial crop’s canopy, from which water drips onto the ground.

“Dripline Area” means the soil and roots that lie within the dripline.

“Fallow land” means land capable of being actively cropped land, but not currently meeting the definition. Unharvested or un-grazed perennial grasses are considered fallow land.

“Field moisture capacity” means the amount of water retained in a soil after it has been saturated and has drained freely. It is usually expressed as a percentage of the oven dry weight of the soil.

“Grass Reinforcement Mesh” means an extruded plastic grid specifically designed to be installed over existing vegetated ground to distribute loads and protect the soil and vegetation from compaction caused by vehicles, animals, or pedestrians.

“Ground protection mats” means specifically designed construction mats consisting of wood, plastic, or metal that distribute heavy loads over a larger area to prevent soil compaction. Plywood is not acceptable to use as a ground protection mat.

“Improved parking and storage area” means a portion of the preserved premises used for parking vehicles or storage of agricultural equipment that has had a surface added to it in accordance with the standard set forth below.

“Low Ground Pressure Equipment” means construction equipment specifically designed to spread the weight of the equipment over a larger area with tracks or other design features. Examples include a tracked excavator or tracked skid steer.

“Low intensity ground cover” means an area that maintains dense vegetative cover, that is covered by four (4) to six (6) inches of coarse mulch, grass reinforcement mesh, or employs ground protection mats while being utilized.

“Normal Tillage” means generally accepted agricultural practices for seedbed preparation and cultivation of soil including moldboard plowing, disking, chisel plowing, and the use of similar site preparation practices as determined by the Committee. Normal tillage is limited to the depth of the surface layer, designated as the plow layer, which is the Ap soil horizon.

“Parking area” means an area on a farm used for vehicular parking that does not meet the definition of a travel lane. A parking area encompasses collector lanes but does not include arterial lanes.

“Parking structure” means any fence, barrier, bollard, parking aid, traffic control device, lighting fixture, or similar structure that is installed for long-term use, specifically structures that limit or prohibit normal

¹ https://efotg.sc.egov.usda.gov/api/CPSFile/13005/340_NJ_CPS_Cover_Crop_2014

harvesting or tillage activities. Temporary traffic control devices such as wooden stakes, fiberglass reflective rods, rope, and traffic cones which are installed only during a farm event and removed at the events' completion are not considering parking structures. Agricultural fencing whose primary purpose is to contain livestock or exclude wildlife and generally follows the field perimeter is not considered a parking structure.

"Permeable" means a material or surface treatment that allows the passage of water into the soil at a rate equal to or greater than the surrounding surface soils, or that allows the passage of water into the soil at a rate equal to or greater than the saturated hydraulic conductivity for the soil type identified in the soil survey.

"Private agricultural use" means the storage or parking of farm-use vehicles and equipment, delivery vehicles, staff vehicles, or other similar equipment. In no case will private-agricultural use include parking of patrons or members of the public.

"Public parking" means parking of vehicles registered to patrons, members of the public, or suppliers of the farm not directly employed by the farm.

"Semi-permanent parking and storage area" means a portion of the preserved premises used for parking vehicles or storage of agricultural equipment that occurs on vegetated or specially constructed gravel areas and does not meet the design criteria set forth in the Temporary Parking and Storage Areas BMP and follows the standards set forth below.

"Soil Compaction" means any activity other than normal tillage that results in an increase in soil bulk density or consolidation or reduces a soil's capacity to infiltrate water including, but not limited to, preparing or using land for the placement of engineered structures, footings, foundations, earth-retaining structures, parking areas, or roadways through static force, tamping, vibration, kneading, and rolling techniques unless specifically identified by the Committee as an exempt agricultural practice.

"Soil Loss Tolerance Rate (T)" means the maximum rate of annual soil loss that will permit crop productivity to be sustained economically and indefinitely on a given soil (*source: American Society of Agronomy, Soil Science Society of America, Special Publication Number 45*).

"Subsoil" means the layer of soil beneath the topsoil where there is visibly less organic matter and root development than the topsoil layer, typically noticed by a change in soil color. For these standards, subsoil is considered the B soil horizon.

"Temporary Traffic Control Devices" means parking aids utilized to control the flow of traffic which can be installed and removed by hand and are used only during a farm event. They are removed at the events' completion are not considering parking structures. Examples include wooden stakes, fiberglass reflective rods, rope, and traffic cones.

"Topsoil" means the uppermost layer in a natural soil profile where root growth, biological activity, and organic matter are concentrated. Topsoil is composed of organic material, mineral particles (sand, silt, and clay) air, and water. For these standards topsoil includes the O, A, and E soil horizons. It may also be called the "plow layer", "surface soil", "Ap layer", "Ap horizon", or "surface layer". Topsoil depth is site specific, but typically varies between 8 and 12 inches.

“Travel lane” means a generally linear feature on a farm primarily used for the conveyance of vehicles, pedestrians, livestock, and/or equipment that is not more than 10 feet wide for one-way traffic or 16 feet wide for two-way traffic, measured from the outside of the tire tracks with an additional 2 foot allowance per side for a shoulder.²

Where Practice Applies:

Any portion of a preserved premises used for parking and/or storage that does not meet the criteria identified in the Temporary Parking and Storage Areas BMP or the permanent parking definition and is utilized in accordance with the standards below.

Design Criteria to Qualify for BMP Certification:

For Semi-Permanent Vegetated Parking and Storage Areas:

1. Notwithstanding the following, the use of semi-permanent vegetated parking and storage areas shall be compliant with the Temporary Parking and Storage BMP except:
 - a. Land used for semi-permanent vegetated parking and storage areas may be fallow land.
 - b. Parking structures may be utilized.
 - c. There are no specific requirements to maintain dense vegetative cover.
 - d. May utilize ground protection mats for more than 180 days per year.
 - e. Proof of acceptable bulk density test results shall be provided annually by the farmer to the SADC.
2. A scaled plan-view map shall be prepared and submitted to SADC showing the layout of all proposed and existing arterial lanes, connector lanes, parking spaces, parking structures, and traffic control devices. The total acreage of soil disturbance shall be included.
3. For BMP certification, the land shall not be used for public parking until the plans have been approved by the SADC and any other relevant state, or federal agencies.
4. Parking of public vehicles on semi-permanent vegetated parking areas shall not increase soil dry bulk density above the values listed in Table 19-1 of the Standards for Soil Erosion and Sediment Control in New Jersey:³
 - a. Soil bulk density testing shall be submitted to SADC once annually. ⁴
 - b. Soil test methods shall be selected from the handheld soil penetrometer test method, tube bulk density test method, or nuclear density test method described in the Standard for Land Grading in the Standards for Soil Erosion and Sediment Control in New Jersey.⁵

² Width based on NRCS-NJ Field Office Technical Guide standards for Access Road (Code 560).

³ Bulk density testing and reporting may be required to ascertain compliance. Details on testing will be fleshed out in the Soil Protection Standards.

⁴ Specific testing protocol to be determined.

⁵ New Jersey Standards for Soil Erosion and Sediment Control are incorporated by reference: <https://www.nj.gov/agriculture/divisions/anr/pdf/2014NJSoilErosionControlStandardsComplete.pdf>

Maximum Dry Bulk Densities (grams/cubic centimeter) by soil type Soil Type/Texture Bulk Density

Soil Type/Texture	Bulk Density (g/cc)
Coarse, Medium and Fine Sands and Loamy Sands	1.80
Very Fine Sand and Loamy Very Fine Sand	1.77
Sandy Loam	1.75
Loam, Sandy Clay Loam	1.70
Clay Loam	1.65
Sandy Clay	1.60
Silt, Silt Loam	1.55
Silty Clay Loam	1.50
Silty Clay	1.45
Clay	1.40

Source: USDA Natural Resource Conservation Service, Soil Quality Information Sheet, Soil Quality Resource Concerns: Compaction, April 1996 and Table 19-1 of the Standards for Soil Erosion and Sediment Control in New Jersey, July 2017

For Improved (Surfaced) Parking and Storage Areas:

1. The use of improved parking and storage areas shall be compliant with the deed of easement and applicable state and federal regulations.
2. Improved parking and storage areas shall obtain a soil erosion and sediment control plan from the Soil Conservation District prior to construction when more than 5,000 square feet of the surface area of land is disturbed during installation.
3. Improved parking and storage areas shall be minimized to the maximum extent practicable.
4. A scaled plan-view map shall be prepared and submitted to SADC showing the layout of all proposed and existing parking areas, designating their status as permanent, semi-permanent, or temporary.
5. The total acreage of soil disturbance related to parking areas shall be included in the map and the size and location of proposed topsoil stockpile areas clearly designated.
6. All relevant construction details shall be supplied with the plan including but not limited to: notes about limiting soil compaction, a typical cross-section of the parking or storage area, and material specifications.
7. Construction shall not begin until the plans have been approved by the SADC and any other relevant state, or federal agencies.
8. To avoid adverse impacts to the premises, all new parking areas shall be constructed in compliance with the NJ Stormwater Best Management Practices Manual⁶.
9. Prior to installation, organic material and the entire topsoil layer (the O and A horizons), shall be removed, stockpiled, and stabilized according to the stockpiling standard. At no time shall the topsoil be removed from the premises or mixed with the underlying subsoil.
10. Parking areas excavated or mechanically disturbed more than the depth of the plow layer shall be considered land grading and are not eligible for certification as part of this BMP.
11. When moving topsoil, care shall be taken to avoid overhandling and compaction.
12. Low ground pressure equipment and ground protection mats shall be used during construction.
13. No vehicular traffic shall be allowed on the subsoil during construction. All placement of surface material, grading, and other work necessary to construct the road shall take place from existing travel lanes or parking areas, or from temporary work areas utilizing ground protection mats.

⁶ https://www.njstormwater.org/bmp_manual2.htm

14. All work shall be completed while soil moisture is at or below field moisture capacity.
15. Mechanical soil compaction (e.g. with a sheep-foot compactor or vibratory compactor, or similar) prior to and during installation is not eligible for BMP certification.
16. Parking areas shall follow the contour of the natural terrain to the maximum extent practicable.
17. Parking areas shall be underlain with a suitable woven or non-woven geotextile fabric to prevent base or surface material from becoming embedded into native soil. Fabric shall be permeable to water and must extend sufficiently beyond the gravel to ensure native soil/surface material separation. The fabric shall be installed per manufacturer's guidelines and in accordance with the Geotextiles and Geomembranes BMP.
18. Additional layers of pressure-distributing material (i.e. geogrids) may be added.
19. At least 6 inches of 1-3 inch clean, angular gravel shall be installed as a subbase to properly distribute loads into the subsoil. Other subbase may be acceptable if specified by a professional engineer as being suitable for distributing the design load without compaction of the subsoil.
20. Additional surfacing above the subbase may be added as necessary.
21. Additional road surfacing may include gravel, crushed concrete, cinders, shells or sand more than two inches thick, pavers, bricks, or blocks.
22. The infiltration rate of any surface must be greater than or equal to the porosity of the underlying native soil.
23. The use of poured concrete, asphalt, asphalt millings, porous asphalt or porous concrete shall be considered a permanent parking area and is not eligible for BMP certification.

Maintenance:

For Semi-Permanent Vegetated Parking and Storage Areas:

1. During the period of active use of the parking area any soil erosion shall be addressed promptly.⁷
2. If growing conditions and/or intensity of use cause there to be less than 30% vegetative cover averaged over the approved parking area, ground protection mats or grass reinforcement mesh shall be used to reduce soil compaction.
3. During the growing season a hollow core aerator may be utilized to alleviate soil compaction, except where ground protection mats, grass reinforcement mesh, or coarse mulch are used.
4. Annual agronomic soil testing is recommended for semi-permanent vegetated parking or storage areas. Lime and fertilizer may be applied at the specified agronomic rates to maintain dense vegetative cover.

For Improved Parking and Storage Areas:

1. Erosion from runoff generated from the parking area shall be addressed promptly.
2. All requirements from the Topsoil Stockpiling BMP shall be followed.
3. Maintenance requirements shall be followed for any additional structures (stormwater basins, drainage swales, and similar water control devices installed as part of BMP certification.

⁷ For more information, reference The NJ Department of Agriculture – State Soil Conservation Committee, [The Standards for Soil Erosion and Sediment Control in New Jersey](#) (July 2017).

Rehabilitation:

If rehabilitation of the area is desired, the rehabilitation standards set forth in the Soil Protection Standards shall be followed. Additionally, at the end of the useful life of the parking and storage area, all related materials shall be removed from the property, including but not limited to, geotextiles, subbase, surface materials, drainage features, and fencing.

DRAFT

Best Management Practice for Semi-permanent Travel Lanes (“ORANGE” LAND USE)

DRAFT: 02/26/2021

Purpose:

To provide design guidance for the installation, maintenance, and removal of semi-permanent travel lanes on the preserved premises in a way that allows for current and future proposed agricultural uses while minimizing the potential negative impacts on the soil. The intent is to manage soil resources in a way that results in a functional, durable surface that reduces erosion potential, minimizes soil compaction, protects the integrity of the topsoil, and allows infiltration. In addition, the standard ensures that the lanes can be readily removed and restored to pre-installation conditions with only the use of standard agricultural equipment.

Definitions:

“Conservation Plan” means a farm conservation plan written and approved by NRCS or a Technical Service Provider who is a Certified Conservation Planner through NRCS. Conservation plans are approved by the SCD. It is a site-specific plan that prescribes land treatment and related conservation and natural resources management measures that are deemed to be necessary, practical and reasonable for the conservation, protection and development of natural resources, the maintenance and enhancement of agricultural or horticultural productivity, and the control and prevention of non-point source pollution.

“Field moisture capacity” means the amount of water retained in a soil after it has been saturated and has drained freely. It is usually expressed as a percentage of the oven dry weight of the soil.

“Geotextile Fabrics” means permeable, woven and non-woven plastic fabrics, typically used for separation of soil layers, erosion control and weed management. Biodegradable or paper fabrics are not included in this definition.

“Ground protection mats” means specifically designed construction mats consisting of wood, plastic, or metal that distribute heavy loads over a larger area to prevent soil compaction. Plywood is not acceptable to use as a ground protection mat.

“Low Ground Pressure Equipment” means construction equipment specifically designed to spread the weight of the equipment over a larger area with tracks or other design features. Examples include a tracked excavator or tracked skid steer.

“Normal Tillage” means generally accepted agricultural practices for seedbed preparation and cultivation of soil including moldboard plowing, disking, chisel plowing, and the use of similar site preparation practices as determined by the Committee. Normal tillage is limited to the depth of the surface layer, designated as the plow layer, which is the Ap soil horizon.

“Permeable” means a material or surface treatment that allows the passage of water into the soil at a rate equal to or greater than the surrounding surface soils, or that allows the passage of water into the soil at a rate equal to or greater than the saturated hydraulic conductivity for the soil type identified in the soil survey.

“Semi-permanent travel lane” means a travel lane meeting the design criteria set forth in this standard. Semi-permanent travel lanes are generally moderate to regular-use travel areas between agricultural infrastructure or in other areas of the farm where temporary travel lanes are not sufficient to meet the needs of the farmer. Examples include but are not limited to: travel lanes between greenhouses or hoop houses; lanes to access stables or paddocks; access paths within areas of intensive nursery production; gravel driveways used to access the farmstead complex; and fixed route farm roads for vehicular travel.

“Soil Compaction” means any activity other than normal tillage that results in an increase in soil bulk density or consolidation or reduces a soil’s capacity to infiltrate water including, but not limited to, preparing or using land for the placement of engineered structures, footings, foundations, earth-retaining structures, parking areas, or roadways through static force, tamping, vibration, kneading, and rolling techniques unless specifically identified by the Committee as an exempt agricultural practice.

“Subsoil” means the layer of soil beneath the topsoil where there is visibly less organic matter and root development than the topsoil layer, typically noticed by a change in soil color. For these standards, subsoil is considered the B soil horizon.

“Topsoil” means the uppermost layer in a natural soil profile where root growth, biological activity, and organic matter are concentrated. Topsoil is composed of organic material, mineral particles (sand, silt, and clay) air, and water. For these standards topsoil includes the O, A, and E soil horizons. It may also be called the “plow layer”, “surface soil”, “Ap layer”, “Ap horizon”, or “surface layer”. Topsoil depth is site specific, but typically varies between 8 and 12 inches.

“Travel lane” means a generally linear feature on a farm primarily used for the conveyance of vehicles, pedestrians, livestock, and/or equipment that is not more than 10 feet wide for one-way traffic or 16 feet wide for two-way traffic, measured from the outside of the tire tracks with an additional 2 foot allowance per side for a shoulder.¹

Where Practice Applies:

Any driving lane on a preserved premises used for conveying equipment, vehicles, people, or livestock where the use necessitates a gravel surface and which is built and utilized according to the standards below. Driving lanes within or adjoining parking areas should follow the Semi-permanent Parking and Storage Areas BMP.

¹ Width based on NRCS-NJ Field Office Technical Guide standards for Access Road (Code 560).

Design Standards to Qualify for BMP Certification:²

The use of semi-permanent travel lanes shall be in accordance with a farm conservation plan approved by the local soil conservation district and otherwise be compliant with the deed of easement and applicable state and federal regulations.

1. The number of semi-permanent travel lanes required to service the agricultural areas of the farm shall be minimized to the maximum extent practicable.
2. A scaled plan-view map³ shall be prepared and submitted to SADC showing the layout of all proposed and existing soil disturbance, designating their status as permanent, semi-permanent, or temporary.
3. The total acreage of soil disturbance related to travel lanes shall be included in the map and the size and location of proposed topsoil stockpile areas clearly designated.
4. All relevant construction details shall be supplied with the plan including but not limited to: notes about limiting soil compaction, a typical cross-section of the lane, and material specifications.
5. Construction shall not begin until the plans have been approved by the SADC and any other relevant local, state, or federal agencies.
6. To avoid adverse impacts to the premises, all new lanes shall be constructed in compliance with the NJ Stormwater Best Management Practices Manual.
7. Prior to installation, organic material and the entire topsoil layer (the O and A horizons), shall be removed, stockpiled, and stabilized according to the stockpiling standard. At no time shall the topsoil be removed from the premises or mixed with the underlying subsoil.
8. When moving topsoil, care shall be taken to avoid overhandling and compaction.
9. Low ground pressure equipment and ground protection mats shall be used during construction.
10. No vehicular traffic shall be allowed on the subsoil during construction. All placement of surface material, grading, and other work necessary to construct the road shall take place from existing travel lanes or from temporary construction roads utilizing ground protection mats.
11. All work shall be completed while soil moisture is at or below field moisture capacity.
12. Mechanical soil compaction (e.g. with a sheep-foot compactor or vibratory compactor, or similar) prior to and during installation is not eligible for BMP certification.
13. Travel lanes shall follow the contour of the natural terrain. Nominal (less than three inches) smoothing of the subsoil may occur to facilitate geotextile placement but additional grading will be subject to the limits contained in the Soil Protection Rules.
14. The lane width shall be the minimum required to achieve agricultural objectives but not to exceed the width of two (2) travel lanes or 16 feet, plus a 2-foot vegetated shoulder on each side.
15. Travel lanes shall be underlain with as suitable woven or non-woven geotextile fabric to prevent base or surface material from becoming embedded into native soil. Fabric shall be permeable to

² Adapted from: Standards for Soil Erosion and Sediment Control in New Jersey Standard for Stabilized Construction Access (January 2014); Wisconsin Department of Natural Resources Conservation Practice Standard Stone Tracking Pad and Tire Washing No. 1057 (August 2003); Massachusetts Erosion and Sediment Control Guidelines for Urban and Suburban Areas, Construction Entrance and Construction Road Stabilization (May 2003); Natural Resource Conservation Service Conservation Practice Standard, New Jersey, Access Road, Code 560 (September 2014).

³ Detailed being drafted.

water and must extend sufficiently beyond the gravel to ensure native soil/surface material separation. The fabric shall be installed per manufacturer's guidelines.

16. Additional layers of pressure-distributing material (i.e. geogrids) may be added.
17. At least 6 inches of 1-3 inch clean, angular gravel shall be installed as a subbase to properly distribute loads into the subsoil. Other subbase may be acceptable if specified by a professional engineer as being suitable for distributing the design load without compaction of the subsoil.
18. Additional surfacing above the subbase may be added as necessary but the infiltration rate of the surface shall be greater than or equal to the porosity of the underlying soil.
19. Additional road surfacing may include gravel, crushed concrete, cinders, shells or sand more than 2 inches thick, pavers, bricks, or blocks.
20. The use of poured concrete, asphalt, asphalt millings, porous asphalt or porous concrete shall be considered a permanent travel lane and is not eligible for BMP certification.

Maintenance:

1. For the duration of the life of the semi-permanent travel lane, a separation shall be maintained between the gravel surface and the native subsoil.
2. There are no particular requirements to keep the lane surface free of sediment.
3. Care shall be taken to avoid contamination of the subsoil with high concentrations of fuel, agricultural chemicals, or other toxic substances that might affect future farming ability.
4. Erosion from runoff generated on or adjacent to the travel lane shall be addressed promptly.
5. All requirements from the Soil Stockpiling BMP shall be followed.
6. Maintenance requirements shall be followed for any additional structures such as: stormwater basins, drainage swales, and similar water control devices installed as part of BMP certification

Rehabilitation:

If rehabilitation of the area is desired, the rehabilitation standards set forth in the Soil Protection Standards shall be followed. Additionally, at the end of the useful life of the travel lane, all related materials shall be removed from the property, including but not limited to, geotextiles, subbase, surface materials, drainage features, and fencing.

Best Management Practice (BMP) for Soil Stockpiling (“ORANGE” LAND USE)

DRAFT: 2/26/2021

Purpose:

To provide standards for the construction and maintenance of long-term soil stockpiles. Typically, these stockpiles are associated with soil disturbances where another BMP allows for soil removal for BMP certification, but also apply to soil stockpiled on the farm for any purpose. The standards herein are intended to minimize the potential negative impacts of stockpiling to the physical, chemical, and biological properties of soil and to facilitate its successful reuse on disturbed areas of the preserved premises during site rehabilitation.

Definitions:

“Dense Vegetative Cover” means an area that maintains more than 70% vegetative cover, or greater than 90% crop residue.

“Field moisture capacity” means the amount of water retained in a soil after it has been saturated and has drained freely. It is usually expressed as a percentage of the oven dry weight of the soil.

“Ground protection mats” means specifically designed construction mats consisting of wood, plastic, or metal that distribute heavy loads over a larger area to prevent soil compaction. Plywood is not acceptable to use as a ground protection mat.

“Low Ground Pressure Equipment” means construction equipment specifically designed to spread the weight of the equipment over a larger area with tracks or other design features. Examples include a tracked excavator or tracked skid steer.

“Low intensity ground cover” means an area that maintains dense vegetative cover, that is covered by four (4) to six (6) inches of coarse mulch, grass reinforcement mesh, or employs ground protection mats while being utilized.

“Low Intensity Topsoil Stockpile” means a topsoil stockpile designed with a maximum height of 3 feet designed in accordance with these standards. Parking and recreational uses are expressly prohibited on low intensity stockpiles.

“Minimum Rooting Depth” means at least 40 inches or a lesser depth equal to the depth of a subsurface layer in the natural soil profile that inhibits or prevents root penetration (*source: NRCS Specifications for Prime Farmland*).

“Moderate Intensity Topsoil Stockpile” means a topsoil stockpile with a minimum thickness of 12 inches and a maximum thickness of 18 inches placed on native topsoil and utilized exclusively for hay production. Parking and recreational uses are expressly prohibited on moderate intensity topsoil stockpiles.

“Normal Tillage” means generally accepted agricultural practices for seedbed preparation and cultivation of soil including moldboard plowing, disking, chisel plowing, and the use of similar site preparation practices as determined by the Committee. Normal tillage is limited to the depth of the surface layer, designated as the plow layer, which is the Ap soil horizon.

“Soil Compaction” means any activity other than normal tillage that results in an increase in soil bulk density or consolidation or reduces a soil’s capacity to infiltrate water including, but not limited to, preparing or using land for the placement of engineered structures, footings, foundations, earth-retaining structures, parking areas, or roadways through static force, tamping, vibration, kneading, and rolling techniques unless specifically identified by the Committee as an exempt agricultural practice.

“Soil Resource Plan” means a plan developed by the landowner or the landowner’s authorized agent to document that all design criteria for the Soil Stockpile BMP certification shall be met. The plan must be submitted to SADC and approved before work commences.

“Soil Structure” means the arrangement of soil particles into aggregates which form structural units.

“Soil Survey” means soil data and information produced by the National Cooperative Soil Survey. It is operated by the USDA Natural Resources Conservation Service (NRCS).

“Subsoil” means the layer of soil beneath the topsoil where there is visibly less organic matter and root development than the topsoil layer, typically noticed by a change in soil color. For these standards, subsoil is considered the B soil horizon.

“Topsoil” means the uppermost layer in a natural soil profile where root growth, biological activity, and organic matter are concentrated. Topsoil is composed of organic material, mineral particles (sand, silt, and clay) air, and water. For these standards topsoil includes the O, A, and E soil horizons. It may also be called the “plow layer”, “surface soil”, “Ap layer”, “Ap horizon”, or “surface layer”. Topsoil depth is site specific, but typically varies between 8 and 12 inches.

Where Practice Applies:

To all soil stockpiles necessary to maintain compliance with any other Soil Protection Standards BMP or to soil stockpiles from other areas of soil disturbance where there is an interest by the farmer in future flexibility of the landuse. Stockpiled materials other than soil, including, but not limited to manure, compost, wood, stone piles, and other similar materials, are not included in this standard.

Design Criteria to Qualify for BMP Certification of all Soil Stockpiles:

1. The use of soil stockpiles shall be compliant with the deed of easement and applicable state regulations.
2. Prior to undertaking any project that would require a topsoil stockpile, a soil resource plan shall be submitted to SADC for certification that includes the following:
 - a. A scaled plan-view map¹ shall be prepared showing the layout of all proposed and existing areas of soil disturbance and their associated limitation class.
 - b. The total acreage of soil disturbance shall be included in the map and the size, location, and volume of proposed topsoil stockpile areas clearly designated, including proposed depths of topsoil and subsoil removal.
 - c. All relevant construction details shall be supplied with the plan including but not limited to, notes describing how soil compaction will be limited, site access plan (e.g. proposed use of travel lanes or ground protection mats), methods for stripping, stockpiling,

¹ Working out details on most appropriate scale.

- reusing, and ameliorating the soils, stockpile locations, dimensions and a typical cross section of proposed topsoil piles.
- d. Identification of a responsible entity for all work.
 - e. Soil survey maps for the property.
 - f. Proposed signage or other identification to prevent improper use of stockpile areas.
3. A site inspection by SADC staff may be required prior to approving work. SADC may require soil test logs provided by a professional soil scientist showing the depth of subsoil and topsoil to be removed.
 4. Construction shall not begin until the plans have been approved by the SADC and any other required state or federal agencies.
 5. No work shall take place when soils on the site are above field moisture capacity.
 6. Soil shall be removed and placed using low ground pressure equipment unless work is done from ground protection mats.
 7. When moving, handling, and grading soil, care shall be taken to avoid overhandling and compaction. When possible, the soil shall be placed directly onto the appropriate soil stockpile or shall be placed directly into a vehicle to be transported to the stockpile location.
 8. Alternative stripping methods that can be shown to afford the same degree of soil protection may be approved at the sole discretion of the SADC.
 9. Stockpile placement shall avoid prime farmland soils when feasible.
 10. Soil shall be managed in a way to maintain its soil structure to the maximum extent practicable. Intentionally breaking soil chunks into smaller pieces or passing soil through a sieve or screen prior to placement is not eligible for BMP certification.
 11. If equipment travel over the soil stockpile is necessary for development or maintenance of the stockpile, travel shall be limited to the minimum number of passes required. Travel shall not increase soil dry bulk density above the values listed in Table 19-1 of the Standards for Soil Erosion and Sediment Control in New Jersey:²
 - a. Need for, and frequency of, testing for bulk density shall be at the discretion of SADC or the easement holder when visual inspection indicates soil compaction may be present or the requisite low intensity ground cover is not being maintained.
 - b. Soil test methods shall be selected from the Handheld Soil Penetrometer Test Method, Tube Bulk Density Test Method, or Nuclear Density Test Method described in the Standard for Land Grading in the Standards for Soil Erosion and Sediment Control in New Jersey.³

² Bulk density testing and reporting may be required to ascertain compliance. Details on testing will be fleshed out in the Soil Protection Standards.

³ New Jersey Standards for Soil Erosion and Sediment Control are incorporated by reference:
<https://www.nj.gov/agriculture/divisions/anr/pdf/2014NJSoilErosionControlStandardsComplete.pdf>

Maximum Dry Bulk Densities (grams/cubic centimeter) by soil type Soil Type/Texture Bulk Density

Soil Type/Texture	Bulk Density (g/cc)
Coarse, Medium and Fine Sands and Loamy Sands	1.80
Very Fine Sand and Loamy Very Fine Sand	1.77
Sandy Loam	1.75
Loam, Sandy Clay Loam	1.70
Clay Loam	1.65
Sandy Clay	1.60
Silt, Silt Loam	1.55
Silty Clay Loam	1.50
Silty Clay	1.45
Clay	1.40

Source: USDA Natural Resource Conservation Service, Soil Quality Information Sheet, Soil Quality Resource Concerns: Compaction, April 1996 and Table 19-1 of the Standards for Soil Erosion and Sediment Control in New Jersey, July 2017

12. Care shall be taken to avoid soil smearing. If the soil is smeared during construction, soil shall be scarified to allow for water and air infiltration and exchange.
13. No woody vegetation is allowed on soil stockpiles unless specifically permitted herein.

Design Criteria to Qualify for BMP Certification of Topsoil Stockpiles:

1. In addition to the general soil stockpiling criteria above, the following requirements apply to topsoil removal, stockpiling, and stabilization:
2. The area to be stripped of topsoil:
 - a. Shall have existing vegetation removed by harvesting, mowing, or treating with herbicide according to the manufacturers' label.
 - b. Shall not be tilled before excavating topsoil.
 - c. Bulky vegetation (mulch, corn stover, excessive grass, etc.) shall not be incorporated into topsoil stockpiles. Instead, the material shall be harvested or otherwise removed.
 - d. Bulldozers, land graders, land planes, or similar equipment shall not be used to remove or transport topsoil.
 - e. All hauling equipment shall operate on existing lanes, or ground protection mats
3. Low intensity topsoil stockpile areas:
 - a. Shall have existing vegetation removed.
 - b. The existing topsoil shall be tilled or ripped to eliminate any transition zone between the existing topsoil and the topsoil stockpile to be placed on the area.
 - c. Topsoil shall be stockpiled to a maximum height of three (3) feet⁴ above original grade.
 - d. The side-slopes of the topsoil stockpile shall be no greater than 4 Horizontal:1 Vertical (25%) to reduce erosion potential and allow for routine mowing.
 - e. When topsoil is planned to be stockpiled for more than 30 days it shall be seeded and mulched according to the Critical Area Planting (342), Tables 3 and 4

⁴ <https://conservancy.umn.edu/bitstream/handle/11299/59360/4.7.Strohmayer.pdf?sequence=1>

available electronically here:

<https://efotg.sc.egov.usda.gov/references/public/NJ/NJ342.pdf>, where the purpose of planting is to stabilize berms and low embankments.

- i. Seeding will occur within the recommended planting dates in table 2 for the species selected.
 - ii. Any stabilization outside the seeding window shall be mulched in accordance with the *Standards for Soil Erosion and Sediment Control in New Jersey, Stabilization with Mulch only* available electronically here: <https://www.nj.gov/agriculture/divisions/anr/pdf/2014NJSoilErosionControlStandardsComplete.pdf>, until permanent seeding occurs within the seeding window.
4. Moderate intensity topsoil stockpile areas:
- a. Shall have all vegetation removed.
 - b. The existing topsoil shall be tilled or ripped to eliminate any transition zone between the existing topsoil and the topsoil stockpile to be placed on the area.
 - c. Topsoil shall be placed at a depth of not less than 12 inches and not more than 18 inches.
 - d. Side slopes shall be no greater than 6 Horizontal: 1 vertical.
 - e. Shall be seeded to an appropriate long-term, deep rooting perennial hay crop within 30 days.
 - f. During establishment, no harvesting shall occur until the crop has reached a minimum height of 18 inches.

Design Criteria to Qualify for BMP Certification of Subsoil Stockpiles:

In addition to the design criteria for all soil stockpiles above, the following special conditions apply to subsoil removal, stockpiling, and stabilization.

1. Prior to removing subsoil, all topsoil from both the disturbed area and stockpile location shall be removed and appropriately stockpiled.
2. The subsoil at the stockpile location shall be scarified to eliminate any transition zone between the existing subsoil and the subsoil stockpile.
3. Bulldozers, land graders, land planes, or similar equipment may be used to remove or transport subsoil within the disturbed area. All work shall be completed using methods that maintain soil structure and minimize compaction to subsoil.
4. Alternative stripping methods that can be shown to afford the same degree of soil protection may be approved at the sole discretion of the SADC.
5. Temporary construction lanes outside the disturbed area shall follow the Improved or Unimproved Travel Lanes BMPs.
6. Care shall be taken to avoid exposing acid soils, tile drainage, irrigation mainlines, underground utilities, seasonal high-water tables, and other similar facilities during construction that could impact surrounding farmland.
7. Subsoil shall be stockpiled to a height no more than 12 feet above original grade.
8. The sides of the subsoil stockpile shall be no greater than 3 Horizontal: 1 Vertical (33%) slopes.

9. When subsoil is planned to be stockpiled for more than 30 days it shall be stabilized according to the Standards for Soil Erosion and Sediment Control in New Jersey or the USDA-NRCS Critical Area Planting Standard (<https://efotg.sc.egov.usda.gov/references/public/NJ/NJ342.pdf>).

Maintenance of Soil Stockpiles:

1. A minimum of 70% vegetative cover shall be established and maintained on the stockpiles at all times. Stockpiles shall be reseeded as necessary to maintain dense vegetative cover. There shall be no tillage of stockpiles after initial establishment except as expressly provided herein.
2. agronomic nutrient testing of the surface of the stockpile shall be completed as soon as the stockpile is constructed. Appropriate amendments shall be added to the soil to establish and maintain at least 70% vegetative cover as recommended by the soil test results.
3. Permanent vegetation on low intensity soil stockpiles shall be mowed no lower than six (6) inches and shall be maintained free of woody vegetation unless otherwise specified herein. Equipment travel over the stockpiles shall be minimized and shall only occur when the stockpile is at or below field moisture capacity.
4. Permanent vegetation on moderate intensity soil stockpiles shall be mowed or harvested not less than 4 inches and shall be allowed to regrow at least 12 inches prior to subsequent harvests.
5. Trees, shrubs, and woody vegetation shall not be planted or be allowed to establish on soil stockpiles unless specifically approved by the Committee. Nursery stock shall not be established on soil stockpiles.
6. Signage shall be maintained on each soil stockpile preventing improper use. Soil stockpiles shall not be used for picnic areas, parking, travel, pasture or other livestock use, growing crops, filling depressions or containers, or any other use unless specifically provided for herein.
7. The following uses are permitted on low intensity topsoil stockpiles:
 - i. Installing and maintaining up to 10 beehives per acre of topsoil stockpile
 - ii. Installing holiday decorations such as lights and inflatables, marketing signs, or other temporary structures provided:
 1. No more than 10% of the topsoil stockpile is utilized for this purpose.
 2. Items are placed by hand (no equipment on the pile).
 3. Require no excavation.
 4. Are placed on top of the soil and are minimally anchored, as with tent stakes.
 - iii. Planting not more than 10% of the stockpile with decorative flowers, bulbs, or shrubs provided the stockpile maintains dense vegetative cover without the use of wood or stone mulch.
 - iv. Planting, harvesting, or maintenance of approved trees, shrubs, and woody vegetation.
8. The following uses are permitted on moderate intensity topsoil stockpiles:
 - i. All uses permitted on low intensity topsoil stockpiles.
 - ii. Tillage to establish a hay crop not more than once every 5 years.
 - iii. Seeding or overseeding of hay crops
 - v. Harvesting of hay. Care shall be taken to avoid excessive equipment traffic over the topsoil stockpile. Hay bales shall not be stockpiled on the soil stockpile and

shall not be removed from the field unless the ground is below field moisture capacity or the ground is frozen.

9. The following uses are permitted on subsoil stockpiles:

- i. All uses permitted on low or moderate intensity topsoil stockpiles
- ii. Installing and maintaining up to 10 beehives per acre of subsoil stockpile
- iii. Installing holiday decorations such as lights and inflatables, marketing signs, or other temporary structures provided
 1. Items are placed by hand
 2. Require no permanent anchorage
 3. Do not interfere with permanent vegetative cover
- iv. Planting not more than 30% of the subsoil pile with decorative flowers, shrubs, or bulbs, provided the stockpile maintains dense vegetative cover without the use of wood or stone mulch.

10. Erosion rills that form on the stockpile shall be addressed promptly by stabilization with seed, mulch or biodegradable erosion control matting, if necessary, for vegetation to establish.

Rehabilitation:

If rehabilitation of the area is desired, the rehabilitation standards set forth in the Soil Protection Standards shall be followed.

Best Management Practice (BMP) for Temporary Livestock Training Areas (“YELLOW” LAND USE)

DRAFT: 02/26/2021

Purpose:

To provide standards for the use of unimproved arenas, tracks, and other livestock training areas on the preserved premises in a way that supports current and future proposed agricultural uses while minimizing the potential negative impacts on the soil.

Definitions:

“Field moisture capacity” means the amount of water retained in a soil after it has been saturated and has drained freely. It is usually expressed as a percentage of the oven dry weight of the soil.

“Fine gravel” means gravel passing a #4 sieve. Also called stonedust or screenings.

“Livestock training area” means a discrete, uncovered, outdoor space used for riding, racing, training, showing, and rehabilitating horses or other livestock. Livestock training areas include but are not limited to arenas, tracks, and training rings. Pastures and drylots are not considered livestock training areas.

“Public parking” means parking of vehicles registered to patrons, members of the public, or suppliers of the farm not directly employed by the farm.

“Soil Loss Tolerance Rate (T)” means the maximum rate of annual soil loss that will permit crop productivity to be sustained economically and indefinitely on a given soil (*source: American Society of Agronomy, Soil Science Society of America, Special Publication Number 45*).

“Subsoil” means the layer of soil beneath the topsoil where there is visibly less organic matter and root development than the topsoil layer, typically noticed by a change in soil color. For these standards, subsoil is considered the B soil horizon.

“Temporary Livestock Training Area” means a livestock training facility that has been constructed and maintained in accordance with the standard set forth herein.

“Topsoil” means the uppermost layer in a natural soil profile where root growth, biological activity, and organic matter are concentrated. Topsoil is composed of organic material, mineral particles (sand, silt, and clay) air, and water. For these standards topsoil includes the O, A, and E soil horizons. It may also be called the “plow layer”, “surface soil”, “Ap layer”, “Ap horizon”, or “surface layer”. Topsoil depth is site specific, but typically varies between 8 and 12 inches.

Where Practice Applies:

Livestock training areas used for activities such as riding, racing, training, showing, and rehabilitating horses or other livestock that are constructed by utilizing the soil in its existing condition or by top dressing native soil with wood mulch, sand, or fine gravel in accordance with the standards below.

Design Criteria to Qualify for BMP Certification:

1. The use of temporary livestock training areas shall be compliant with the deed of easement and applicable state and federal regulations.
2. Surfaces intentionally compacted through the use of sheepsfoot rollers, vibratory compactors, or similar equipment are not eligible for BMP certification.
2. The topsoil shall not be removed or moved to accommodate use as a temporary livestock training area. ¹
3. Temporary livestock training areas shall follow the contour of the natural terrain while avoiding steep slopes.
4. Non-synthetic, plant-based mulch (e.g. chopped leaves) or woodchips may be added to the facility surface.
5. Sand or fine gravel may be added to the track, arena, or ring to a cumulative depth of no more than two (2) inches. Subsequent additions of sand or fine gravel that increase the cumulative total above two (2) inches shall follow the standards set forth in the Improved Livestock Training Facilities BMP. ²
6. The infiltration rate of the track or arena surface must be greater than or equal to the porosity of the underlying native soil.
7. All use of the temporary livestock training Areas shall maintain an annual soil loss at or below the Soil Loss Tolerance Rate "T."
8. Use of a temporary livestock training area shall take place only while soil moisture is at or below field moisture capacity.
9. Livestock training areas shall not be utilized for public parking.

Maintenance:

1. Erosion from runoff generated from the temporary livestock training area shall be addressed promptly.
2. Care shall be taken to avoid contamination of the soil with high concentrations of fuel, agricultural chemicals, or other toxic substances that might affect future soil health.

Rehabilitation:

If rehabilitation of the area is desired, the rehabilitation standards set forth in the Soil Protection Standards shall be followed.

¹ If topsoil needs to be moved from the facility location, reference the standards set forth in the Semi-permanent Livestock Training Areas BMP.

² Any other surface material added to a Temporary Livestock Training Area shall follow the standards set forth in the Semi-permanent Livestock Training Areas BMP.

Best Management Practice (BMP) for Temporary Parking and Storage Areas (“YELLOW” LAND USE)

DRAFT: 2/26/2021

Purpose:

To provide standards that protect soil on actively cropped land from excessive compaction and degradation from low intensity, short term uses as a parking and/or storage area.

Definitions:

“Actively cropped land” means land on portions of the premises that is available for agricultural use and production where the following apply: crops or forages are grown directly in the soil profile for a minimum of 150 consecutive days in one (1) calendar year or for two (2) periods of not less than 90 days each in one (1) calendar year; annual crops and hay are harvested or perennial crops (other than hay) maintained annually, and forages are consumed by direct grazing; or cover crops grown as part of a production rotation and included in a farm conservation plan that may or may not be harvested. All grass and forage species shall be maintained at a length of 4 inches or greater.

“Arterial lane” means established travel lanes used by vehicles to access parking areas, which typically follow the peripheral edges of a parking area. These arterial lanes may follow the Improved Travel Lane BMP or Unimproved Travel Lane BMP.

“Coarse mulch” means wood chip mulch consisting of shredded leaves, bark, and wood particles ranging from 1 to 4 inches in length, with at least 50% of the mulch having a length of 2 inches or greater. Saw dust is not considered coarse mulch.

“Collector Lane” means a lane within a parking area used to connect arterial lanes to parking stalls. These lanes are included as part of the parking area and shall follow the Parking Area standards.

“Conservation Plan” means a farm conservation plan written and approved by NRCS or a Technical Service Provider who is a Certified Conservation Planner through NRCS. Conservation plans are approved by the SCD. It is a site-specific plan that prescribes land treatment and related conservation and natural resources management measures that are deemed to be necessary, practical and reasonable for the conservation, protection and development of natural resources, the maintenance and enhancement of agricultural or horticultural productivity, and the control and prevention of non-point source pollution.

“Cover Crop” means an annual or perennial crop consisting of a specific plant or mix of plants that are planted and grown primarily to improve soil quality by reducing soil compaction and by reducing erosion. Cover Crops shall be compliant with the USDA-NRCS FOTG Conservation practice standard for Cover Crop (340) and shall, at minimum, have as its purpose minimizing soil compaction.¹

“Dense Vegetative Cover” means an area that maintains more than 70% vegetative cover, or greater than 90% crop residue.

¹ https://efotg.sc.egov.usda.gov/api/CPSFile/13005/340_NJ_CPS_Cover_Crop_2014

“Dripline” means the outermost circumference of a tree or perennial crop’s canopy, from which water drips onto the ground.

“Dripline Area” means the soil and roots that lie within the dripline.

“Fallow land” means land capable of being actively cropped land, but not currently meeting the definition. Unharvested or un-grazed perennial grasses are considered fallow land.

“Field moisture capacity” means the amount of water retained in a soil after it has been saturated and has drained freely. It is usually expressed as a percentage of the oven dry weight of the soil.

“Grass Reinforcement Mesh” means an extruded plastic grid specifically designed to be installed over existing vegetated ground to distribute loads and protect the soil and vegetation from compaction caused by vehicles, animals, or pedestrians.

“Ground protection mats” means specifically designed construction mats consisting of wood, plastic, or metal that distribute heavy loads over a larger area to prevent soil compaction. Plywood is not acceptable to use as a ground protection mat.

“Low intensity ground cover” means an area that maintains dense vegetative cover, that is covered by four (4) to six (6) inches of coarse mulch, grass reinforcement mesh, or employs ground protection mats while being utilized.

“Normal Tillage” means generally accepted agricultural practices for seedbed preparation and cultivation of soil including moldboard plowing, disking, chisel plowing, and the use of similar site preparation practices as determined by the Committee. Normal tillage is limited to the depth of the surface layer, designated as the plow layer, which is the Ap soil horizon.

“Parking area” means an area on a farm used for vehicular parking that does not meet the definition of a travel lane. A parking area encompasses collector lanes but does not include arterial lanes.

“Parking structure” means any fence, barrier, bollard, parking aid, traffic control device, lighting fixture, or similar structure that is installed for long-term use, specifically structures that limit or prohibit normal harvesting or tillage activities. Temporary traffic control devices such as wooden stakes, fiberglass reflective rods, rope, and traffic cones which are installed only during a farm event and removed at the events’ completion are not considering parking structures. Agricultural fencing whose primary purpose is to contain livestock or exclude wildlife and generally follows the field perimeter is not considered a parking structure.

“Private agricultural use” means the storage or parking of farm-use vehicles and equipment, delivery vehicles, staff vehicles, or other similar equipment. In no case will private-agricultural use include parking of patrons or members of the public.

“Public parking” means parking of vehicles registered to patrons, members of the public, or suppliers of the farm not directly employed by the farm.

“Soil Compaction” means any activity other than normal tillage that results in an increase in soil bulk density or consolidation or reduces a soil’s capacity to infiltrate water including, but not limited to, preparing or using land for the placement of engineered structures, footings, foundations, earth-

retaining structures, parking areas, or roadways through static force, tamping, vibration, kneading, and rolling techniques unless specifically identified by the Committee as an exempt agricultural practice.

“Soil conditioning index” means a Natural Resources Conservation Service (NRCS) tool that predicts the consequences of cropping systems and tillage practices on soil organic matter.

“Soil Loss Tolerance Rate (T)” means the maximum rate of annual soil loss that will permit crop productivity to be sustained economically and indefinitely on a given soil (*source: American Society of Agronomy, Soil Science Society of America, Special Publication Number 45*).

“Temporary Storage Area” means areas utilized for the storage of infrequently used farm equipment or storage of privately owned equipment associated with permissible residential use of the farm. Examples include, but are not limited to, combines, hay wagons, RV’s, boats, and trailers.

“Temporary Parking Area” means actively cropped areas seasonally or periodically used for public parking of vehicles related to the operation of the farm and which follows the standards described herein.

“Temporary Traffic Control Devices” means parking aids utilized to control the flow of traffic which can be installed and removed by hand and are used only during a farm event. They are removed at the events’ completion are not considering parking structures. Examples include wooden stakes, fiberglass reflective rods, rope, and traffic cones.

“Topsoil” means the uppermost layer in a natural soil profile where root growth, biological activity, and organic matter are concentrated. Topsoil is composed of organic material, mineral particles (sand, silt, and clay) air, and water. For these standards topsoil includes the O, A, and E soil horizons. It may also be called the “plow layer”, “surface soil”, “Ap layer”, “Ap horizon”, or “surface layer”. Topsoil depth is site specific, but typically varies between 8 and 12 inches.

“Travel lane” means a generally linear feature on a farm primarily used for the conveyance of vehicles, pedestrians, livestock, and/or equipment that is not more than 10 feet wide for one-way traffic or 16 feet wide for two-way traffic, measured from the outside of the tire tracks with an additional 2-foot allowance per side for a shoulder.²

Where Practice Applies:

Portions of a premises that are actively cropped land-but may also be used seasonally or periodically for parking related to the operation of the farm including, but not limited to, short term public parking areas and temporary, private farm vehicle and/or equipment storage.

Design Criteria to Qualify for BMP Certification:

For all temporary parking and temporary storage areas:

1. The use of temporary parking and storage areas shall be compliant with the deed of easement and applicable state and federal regulations.

² Width based on NRCS-NJ Field Office Technical Guide standards for Access Road (Code 560).

2. The primary use of the parking and storage area shall be for as actively cropped land or private agricultural equipment storage. Fallow land needed for parking shall follow the Semi-permanent Parking and Storage Area BMP.
3. No topsoil shall be removed or moved to accommodate use as temporary parking.
4. Any area mechanically disturbed by tillage or other means to a depth deeper than the plow layer shall not be eligible for BMP certification.
5. Mechanical soil compaction (e.g. with a sheep-foot compactor or vibratory compactor, or similar) prior to or during installation shall not be eligible for BMP certification.
6. Low intensity ground cover shall be in place prior to use and maintained during use.
7. Dense vegetative cover shall be maintained on the area for at least 120 days per year.
8. Land used for temporary parking and storage shall maintain soil loss less than or equal to "T" for the soils present and shall have a positive soil conditioning index (SCI).

In addition to the criteria above:

Temporary parking areas:

1. Shall meet the definition of actively cropped land.
2. No parking structures shall be eligible for BMP certification.
3. Temporary traffic control devices shall be utilized to limit compaction to designated lanes.
 - a. Individual parking stalls shall be delineated using paint, markers, lime, or other suitable materials to control traffic and limit compaction to specific wheel tracks within the field.
 - b. A traffic-flow pattern shall be established to minimize the total area subjected to repeat compaction through the use of temporary traffic control devices.
4. Collector lanes shall be of the minimum width required for the intended purpose or as determined by applicable regulatory authorities the local regulatory authority, if applicable, and shall not exceed 16 feet unless required by law.
5. Public parking shall take place only while soil moisture is at or below field moisture capacity unless coarse mulch or ground protection mats are utilized.
6. Parking of public vehicles on actively cropped land shall not increase soil dry bulk density above the values listed in Table 19-1 of the Standards for Soil Erosion and Sediment Control in New Jersey:³
 - a. Need for, and frequency of, testing for bulk density shall be at the discretion of SADC or the easement holder when visual inspection indicates soil compaction may be present or the requisite low intensity ground cover is not being maintained.
 - b. Soil test methods shall be selected from the Handheld Soil Penetrometer Test Method, Tube Bulk Density Test Method, or Nuclear Density Test Method described in the Standard for Land Grading in the Standards for Soil Erosion and Sediment Control in New Jersey.⁴

³ Bulk density testing and reporting may be required to ascertain compliance. Details on testing will be fleshed out in the Soil Protection Standards.

⁴ New Jersey Standards for Soil Erosion and Sediment Control are incorporated by reference: <https://www.nj.gov/agriculture/divisions/anr/pdf/2014NJSoilErosionControlStandardsComplete.pdf>

Maximum Dry Bulk Densities (grams/cubic centimeter) by soil type Soil Type/Texture Bulk Density

Soil Type/Texture	Bulk Density (g/cc)
Coarse, Medium and Fine Sands and Loamy Sands	1.80
Very Fine Sand and Loamy Very Fine Sand	1.77
Sandy Loam	1.75
Loam, Sandy Clay Loam	1.70
Clay Loam	1.65
Sandy Clay	1.60
Silt, Silt Loam	1.55
Silty Clay Loam	1.50
Silty Clay	1.45
Clay	1.40

Source: USDA Natural Resource Conservation Service, Soil Quality Information Sheet, Soil Quality Resource Concerns: Compaction, April 1996 and Table 19-1 of the Standards for Soil Erosion and Sediment Control in New Jersey, July 2017

7. Temporary parking areas utilizing coarse mulch shall have all coarse mulch removed from the area within as soon as reasonably practical, when soil is at or below field capacity or frozen. In all cases, care should be taken to avoid compaction during removal.
8. Coarse mulch shall not be incorporated into the soil unless specifically recommended in a conservation plan approved by the USDA Natural Resources Conservation Service.
9. To avoid erosion, coarse-mulched areas shall be over-seeded, planted, or covered with appropriate agronomic mulches such as straw or leaves within one (1) week of coarse mulch removal.
10. No parking shall occur within the dripline area of any tree or perennial crop.

Temporary storage areas:

1. Shall maintain low intensity ground cover at all times.
2. Shall be maintained in a way that establishment of woody vegetation is prevented
3. Shall not be made available for public use unless also compliant with the requirements for temporary parking areas, above.

Ground protection mats used for temporary parking and Temporary storage areas:

1. Shall be installed according to the manufacturer instructions.
2. Shall be inspected daily to ensure they are properly installed for the duration of their use. Should improper use be noted, use will be discontinued until appropriate repairs are made.
3. Shall be installed and removed in a way that minimizes soil compaction, such as installing a mat from a previously installed mat if equipment is being used during install.
4. The use of ground protection mats for more than 180 days in a calendar year should follow the Semi-permanent Parking and Storage Areas BMP.
5. Within 30 days of the end of the use of the parking area, it shall be restored to a condition suitable for being used as actively cropped land- by reseeding, planting with cover-crop, mulching with straw, or other practices identified in the conservation plan.

Maintenance:

1. For the duration of the use of the temporary parking area, the size of the area shall be limited to the minimum necessary to maintain compliance with this standard.
2. Designated lanes shall be maintained during use as a temporary parking area to limit soil compaction to the smallest necessary area.
3. Care shall be taken to avoid contamination of the soil with high concentrations of fuel, agricultural chemicals, or other toxic substances that might affect future agricultural use of the soil.
4. When low intensity ground cover in areas of a temporary parking area cannot be maintained or bulk density exceeds listed values:
 - a. Restorative maintenance is required and shall include the following to restore dense vegetative cover:
 - i. soil decompaction (e.g. core aeration, disking, or plowing),
 - ii. application of soil amendments based on results of a soil test
 - iii. Reestablishment of dense vegetative cover.
 - b. After restorative maintenance, the site must be maintained in dense vegetative cover for a minimum of 6 consecutive months before being utilized again for temporary parking.

Rehabilitation:

If rehabilitation of the area is desired, the rehabilitation standards set forth in the Soil Protection Standards shall be followed.

Best Management Practice (BMP) for Temporary Structures (“YELLOW” LAND USE)

DRAFT: 2/26/2021

Purpose:

To provide guidance on the installation, use, and removal of temporary structures on the preserved premises to comply with Soil Protection Rules.

Definitions:

“Agricultural production” means the production of plants or animals useful to man, including but not limited to: forages or sod crops; grains and feed crops; dairy animals and dairy products; poultry and poultry products; livestock, including beef cattle, sheep, swine, horses, ponies, mules or goats, and including the breeding and grazing of any or all of such animals; bees and apiary products; fur animals; aquatic organisms as part of aquaculture; trees and forest products; fruits of all kinds, including grapes, nuts and berries; vegetables; nursery, floral, ornamental and greenhouse products; or any land devoted to and meeting the requirements and qualifications for payments or other compensation pursuant to a soil conservation program under an agency of the Federal Government. For purposes of this BMP, “agricultural production” shall mean growing crops directly in the soil profile. Land in agricultural production shall have soil loss less than or equal to “T” for the soils present and shall have a positive soil conditioning index (SCI).

“Arterial lane” means established travel lanes used by vehicles to access parking areas, which typically follow the peripheral edges of a parking area. These arterial lanes may follow the Improved Travel Lane BMP or Unimproved Travel Lane BMP.

“Coarse mulch” means wood chip mulch consisting of shredded leaves, bark, and wood particles ranging from 1 to 4 inches in length, with at least 50% of the mulch having a length of 2 inches or greater. Saw dust is not considered coarse mulch.

“Collector Lane” means a lane within a parking area used to connect arterial lanes to parking stalls. These lanes are included as part of the parking area and shall follow the Parking Area standards.

“Conservation Plan” means a farm conservation plan written and approved by NRCS or a Technical Service Provider who is a Certified Conservation Planner through NRCS. Conservation plans are approved by the SCD. It is a site-specific plan that prescribes land treatment and related conservation and natural resources management measures that are deemed to be necessary, practical and reasonable for the conservation, protection and development of natural resources, the maintenance and enhancement of agricultural or horticultural productivity, and the control and prevention of non-point source pollution.

“Cover Crop” means an annual or perennial crop consisting of a specific plant or mix of plants that are planted and grown primarily to improve soil quality by reducing soil compaction and by reducing

erosion. Cover Crops shall be compliant with the USDA-NRCS FOTG Conservation practice standard for Cover Crop (340) and shall, at minimum, have as its purpose minimizing soil compaction.¹

“Dense Vegetative Cover” means an area that maintains more than 70% vegetative cover, or greater than 90% crop residue.

“Field moisture capacity” means the amount of water retained in a soil after it has been saturated and has drained freely. It is usually expressed as a percentage of the oven dry weight of the soil.

“Garden-type utility shed” means a storage shed that does not have electric, water, gas, oil or sewer connections. It includes, but is not limited to, agricultural structures, tool sheds, chicken coops, rabbit hutches, gazebos, and pool sheds.

“Grass Reinforcement Mesh” means an extruded plastic grid specifically designed to be installed over existing vegetated ground to distribute loads and protect the soil and vegetation from compaction caused by vehicles, animals, or pedestrians.

“Ground protection mats” means specifically designed construction mats consisting of wood, plastic, or metal that distribute heavy loads over a larger area to prevent soil compaction. Plywood is not acceptable to use as a ground protection mat.

“High tunnel” means a temporary-agricultural structure constructed of a metal, wood, or durable plastic frame covered with polyethylene, polycarbonate, plastic, or fabric material that is at least six (6) feet in height at the peak of the structure. A high tunnel is used to protect crops from sun, wind, excessive rainfall, cold, or to extend the growing season of crops. Also known as a hoophouse, polyhouse, or temporary greenhouse.

“Low intensity ground cover” means an area that maintains dense vegetative cover, that is covered by four (4) to six (6) inches of coarse mulch, grass reinforcement mesh, or employs ground protection mats while being utilized.

“Low tunnel” means a temporary agricultural structure less than six (6) feet in height that is used to protect crops from sun, wind, excessive rainfall, or cold, to extend the growing season of crops grown in the soil. A low tunnel is installed by covering a metal, wood, or durable plastic frame with polyethylene, polycarbonate, plastic, or fabric material. Also known as a caterpillar tunnel, this structure does not have a permanent foundation, footings, floor, or anchoring system. The frame and exterior covering may or may not be removed during the growing season.

“Movable structures” means a temporarily placed trailer or skid mounted structures, including but not limited to office trailers, portable trailer-mounted-bathrooms, portable toilets, horse trailers, food carts, or similar structures that are capable of being removed from the Premises without demolition.

“Normal Tillage” means generally accepted agricultural practices for seedbed preparation and cultivation of soil including moldboard plowing, disking, chisel plowing, and the use of similar site preparation practices as determined by the Committee. Normal tillage is limited to the depth of the surface layer, designated as the plow layer, which is the Ap soil horizon.

¹ https://efotg.sc.egov.usda.gov/api/CPSFile/13005/340_NJ_CPS_Cover_Crop_2014

“Parking area” means an area on a farm used for vehicular parking that does not meet the definition of a travel lane. A parking area encompasses collector lanes but does not include arterial lanes.

“Run-In/Turn-out Shed” means a three-sided, open-bottom shed used to shelter livestock.

“Semi-permanent parking and storage area” means a portion of the preserved premises used for parking vehicles or storage of agricultural equipment that occurs on vegetated or specially constructed gravel areas and does not meet the design criteria set forth in the Temporary Parking and Storage Areas BMP and follows the standards set forth below.

“Soil Compaction” means any activity other than normal tillage that results in an increase in soil bulk density or consolidation or reduces a soil’s capacity to infiltrate water including, but not limited to, preparing or using land for the placement of engineered structures, footings, foundations, earth-retaining structures, parking areas, or roadways through static force, tamping, vibration, kneading, and rolling techniques unless specifically identified by the Committee as an exempt agricultural practice.

“Soil conditioning index” means a Natural Resources Conservation Service (NRCS) tool that predicts the consequences of cropping systems and tillage practices on soil organic matter.

“Soil Loss Tolerance Rate (T)” means the maximum rate of annual soil loss that will permit crop productivity to be sustained economically and indefinitely on a given soil (*source: American Society of Agronomy, Soil Science Society of America, Special Publication Number 45*).

“Temporary tent” means a temporary--structure with an impermeable covering to provide shelter for agriculture-related activities. Also known a tensioned membrane structure or canopy.

“Topsoil” means the uppermost layer in a natural soil profile where root growth, biological activity, and organic matter are concentrated. Topsoil is composed of organic material, mineral particles (sand, silt, and clay) air, and water. For these standards topsoil includes the O, A, and E soil horizons. It may also be called the “plow layer”, “surface soil”, “Ap layer”, “Ap horizon”, or “surface layer”. Topsoil depth is site specific, but typically varies between 8 and 12 inches.

“Travel lane” means a generally linear feature on a farm primarily used for the conveyance of vehicles, pedestrians, livestock, and/or equipment that is not more than 10 feet wide for one-way traffic or 16 feet wide for two-way traffic, measured from the outside of the tire tracks with an additional 2 foot allowance per side for a shoulder ²

“UCC” means the New Jersey Uniform Construction Code N.J.A.C. 5:23.

Where Practice Applies:

To temporary structures used for agricultural and residential purposes including, but not limited to, high and low tunnels, temporary tents, run-in sheds, garden sheds, and movable structures.

² Width based on NRCS-NJ Field Office Technical Guide standards for Access Road (Code 560).

Design Criteria to Qualify for BMP Certification:

1. The use of for all temporary structures shall be compliant with the deed of easement and applicable local and state regulations.
2. Mechanical soil compaction (e.g. with a sheep-foot compactor or vibratory compactor, or similar) at any time shall not be eligible for BMP certification.
3. No topsoil shall be removed, graded, or mixed with the underlying soil for temporary structure installation or use. Areas excavated or mechanically disturbed more than the depth of the plow layer shall be considered land grading and will be subject to the Soil Protection Rules.

High tunnel or low tunnel³:

1. Shall be in compliance with the construction specifications in the UCC for Temporary Greenhouses (N.J.A.C. 5:23-3.2(d)), including:
 - a. Shall be used exclusively for the production and storage of live plants.
 - b. Shall be installed without any permanent foundation or anchoring system.
 - c. The structure is no wider than 31 feet and there is an unobstructed path of no greater length than 150 feet from any point to a door or fully accessible wall area, the covering of which is a material no greater than six mils (152.4 micrometers) in thickness that yields approximately four pounds of maximum impact resistance to provide egress through a wall.
2. Shall be fully removed at the end of its useful life.
3. Shall be installed in an orientation that minimizes erosive flow.
4. Shall be installed at adequate spacing between tunnels to minimize erosive flow.
5. Soil erosion from the entire field shall be maintained below the tolerable soil loss tolerance, "T".
6. If soil erosion is above tolerable levels, conservation measures shall be implemented to reduce the soil loss to "T" such as vegetative treatment areas, increase in vegetative cover between tunnels, stormwater management features, or other conservation practices recommended as part of an NRCS conservation plan.
7. The covering may or may not be removed during the growing season.
8. Crops may be grown in the native soil or in containers.

Temporary tent:

1. Shall be in compliance with the construction specifications in the UCC for tents, tensioned membrane structures, and canopies (N.J.A.C. 5:23-2.14(b)4.ii.), including:
 - a. Shall be 140 feet or less in any dimension and 16,800 square feet or less in area whether comprised of one unit or multiple units.
 - b. Shall be used or occupied only between April 1 and November 30.
2. Shall not have a permanent foundation, footings, floor, or anchoring system. Shall be installed and removed in a way that minimizes soil compaction, such as installing the tent from previously installed ground protection mats, if equipment is being used during install.

³ Extrapolated from the Uniform Construction Code N.J.A.C. 5:23-3.1 et seq.

3. The soil beneath the entire tent shall maintain low intensity ground cover throughout its use as a temporary tent or shall be protected from soil compaction through the use of ground protection mats or turf reinforcement mesh.
4. If a surface other than low intensity ground cover or ground protection mats are desired, the Semi-permanent Parking and Storage Areas BMP shall be followed.
5. Shall not be installed or removed from the site when soil moisture is at or above field moisture capacity.
6. Shall be preferentially placed on existing semi-permanent or permanent surfaces when possible.
7. Shall not be in place for more than 30 consecutive days from April 1 to November 30 unless on existing semi-permanent or permanent surfaces.
8. To allow sufficient vegetation establishment, the use of temporary tents for more than 120 days in a 12-month period does not qualify for Temporary Structures BMP certification.
9. Within 30 days of the end of the use of the temporary tent the soil shall be restored to a condition suitable for agricultural production by reseeded, planting with cover-crop, mulching with straw, or other practices identified in the conservation plan.
10. Shall have all mulch removed from the area within as soon as reasonably practical, when soil is at or below field capacity or frozen. In all cases, care should be taken to avoid compaction during removal.
11. To avoid erosion, mulched areas shall be over-seeded, planted, or covered with appropriate agronomic mulches such as straw or leaves within 1 week of coarse mulch removal.
12. All use of the field shall maintain an annual soil loss at or below "T".

Movable structures:

1. Shall be in compliance with the construction specifications in the UCC for Temporary Greenhouses (N.J.A.C. 5:23-2.14(b)4.i.), including:
 - a. Shall cover an area less than 120 square feet, including all connecting areas or spaces with a common egress or entrance.
2. The primary use of the land beneath the structure shall be for agricultural production.
3. Shall be limited to the minimum number required for the intended agricultural purpose or, in the case of portable bathrooms or similar structures, as required by law.
4. Portable toilets shall be located close enough to a travel lane, or semi-permanent parking and storage to allow pumping during saturated field conditions.
5. Shall be placed on existing disturbed surfaces, when possible.
6. Shall not be delivered, relocated, or removed from the site when soil moisture is at or above field moisture capacity.
7. When leveling jacks or other support systems are required to stabilize a movable structure, a minimum 12 inches by 12 inches by 2 inches board or other similar load-distributing-surface shall be placed under each support.
8. To allow sufficient vegetation establishment, shall be in place for no more than 120 days in a 12-month period.
9. Within 30 days of the end of the use of the movable structure the soil shall be restored to a condition suitable for agricultural production by reseeded, planting with cover-crop, mulching with straw, or other practices identified in the conservation plan.

Run-in/Turn-out Shed⁴

1. Shall be in compliance with the construction specifications in the UCC for Temporary Greenhouses (N.J.A.C. 5:23-3.2(d)) including:
 - a. Shall not have a permanent foundation or floor.
 - b. Shall be less than 250 square feet in area and less than 14 feet in height.
 - c. Shall have no utility connections (electric, water, gas, oil or sewer connections).
 - d. The structure shall be of sufficient weight to remain in place or shall be anchored to the ground. Concrete shall not be required for anchoring.
2. Installation of gravel beneath the structure shall follow the Semi-Permanent Parking and Storage Areas BMP.
3. Use of course mulch and/or ground protection mats is encouraged.
4. Shall be capable of being moved using normal farm equipment.
5. Shall not be moved when soil moisture is above field moisture capacity.

Garden-type Utility Shed⁵

1. Shall be in compliance with the construction specifications in the UCC for Temporary Greenhouses (N.J.A.C. 5:23-3.2(d)) including:
 - a. Shall be less than 200 square feet in area and less than 10 feet in height.
 - b. Shall have no utility connections (electric, water, gas, oil or sewer connections).
 - c. Shall be dimensionally stable without a foundation system.
 - d. The structure shall be of sufficient weight to remain in place or shall be anchored to the ground. Concrete shall not be required for anchoring.
2. Shall not have a permanent foundation.
3. Installation of gravel beneath the structure must follow the BMP for Semi-Permanent Parking and Storage Areas BMP.
4. Shall be capable of being moved using normal farm equipment.
5. Shall not be moved when soil moisture is above field moisture capacity.
6. Shall be used for agricultural purposes.

Maintenance:

Runoff from temporary structures must be managed in a way that controls water flow to minimize erosion.

Rehabilitation:

At the end of a structure's useful life, it shall be removed along with all anchors.

⁴ Extrapolated from the Uniform Construction Code N.J.A.C. 5:23-3.1 et seq.

⁵ Extrapolated from the Uniform Construction Code N.J.A.C. 5:23-3.1 et seq.

Best Management Practice (BMP) for Temporary Travel Lanes (“YELLOW” LAND USE)

DRAFT: 02/26/2021

Purpose:

To provide standards for the use of temporary travel lanes on the preserved premises in a way that allows for current and future agricultural uses while minimizing the potential negative impacts on the soil.

Definitions:

“Conservation Plan” means a farm conservation plan written and approved by NRCS or a Technical Service Provider who is a Certified Conservation Planner through NRCS. Conservation plans are approved by the SCD. It is a site-specific plan that prescribes land treatment and related conservation and natural resources management measures that are deemed to be necessary, practical and reasonable for the conservation, protection and development of natural resources, the maintenance and enhancement of agricultural or horticultural productivity, and the control and prevention of non-point source pollution.

“Fine gravel” means gravel passing a #4 sieve. Also called stonedust or screenings.

“Normal Tillage” means generally accepted agricultural practices for seedbed preparation and cultivation of soil including moldboard plowing, disking, chisel plowing, and the use of similar site preparation practices as determined by the Committee. Normal tillage is limited to the depth of the surface layer, designated as the plow layer, which is the Ap soil horizon.

“Soil Compaction” means any activity other than normal tillage that results in an increase in soil bulk density or consolidation or reduces a soil’s capacity to infiltrate water including, but not limited to, preparing or using land for the placement of engineered structures, footings, foundations, earth-retaining structures, parking areas, or roadways through static force, tamping, vibration, kneading, and rolling techniques unless specifically identified by the Committee as an exempt agricultural practice.

“Travel lane” means a generally linear feature on a farm primarily used for the conveyance of vehicles, pedestrians, livestock, and/or equipment that is not more than 10 feet wide for one-way traffic or 16 feet wide for two-way traffic, measured from the outside of the tire tracks with an additional 2 foot allowance per side for a shoulder¹

“Temporary Travel Lane” means a travel lane meeting the design criteria set forth in this standard and not being constructed closer than 300 feet in parallel to another semi-permanent or temporary travel lane.

“Topsoil” means the uppermost layer in a natural soil profile where root growth, biological activity, and organic matter are concentrated. Topsoil is composed of organic material, mineral particles (sand, silt, and clay) air, and water. For these standards topsoil includes the O, A, and E soil horizons. It may also be called the “plow layer”, “surface soil”, “Ap layer”, “Ap horizon”, or “surface layer”. Topsoil depth is site specific, but typically varies between 8 and 12 inches.

¹ Width based on NRCS-NJ Field Office Technical Guide standards for Access Road (Code 560).

Where Practice Applies:

Temporary travel lanes are generally low to moderate use travel areas between agricultural infrastructure or lanes used to access agricultural fields that have not been modified with the addition of foreign, non-organic material. This standard is intended for travel lanes meant to allow passage of vehicles, pedestrians, livestock, and/or equipment. Please refer to the BMPs for Semi-permanent Travel Lanes, Semi-permanent Parking and Farmyards, and Temporary Parking and Storage for additional guidance.

Design Standards to Qualify for BMP Certification:

The use of temporary travel lanes shall be in accordance with a conservation plan approved by the local soil conservation district and otherwise be compliant with the deed of easement and applicable state and federal regulations.

1. Temporary travel lanes shall be the minimum width required to achieve agricultural objectives but not exceed a width of 10 feet for one-way travel or 16 feet for two-way travel, not including up to 2-feet of shoulder per side.
 - a. If additional width is required, the lane does not qualify as a temporary travel lane.
2. Surfaces intentionally compacted through the use of sheepsfoot rollers, vibratory compactors, or similar equipment are not eligible for BMP certification.
3. Temporary travel lanes are not required to have any underlayment to reduce soil compaction, but removable soil protection grids or mats are encouraged.
4. Temporary travel lanes shall follow the contour of the natural terrain while avoiding steep slopes to the maximum extent practicable.
5. Vegetation is not required to be maintained in the temporary travel lane but is recommended.
6. Organic mulch or woodchips may be added to the lane surface.
7. Crushed shells, sand, or fine gravel may be added to the lane to a cumulative depth of no more than 2 inches. Subsequent additions of crushed shells or sand that increase the cumulative total above 2 inches shall follow the standards set forth in the Semi-permanent Travel Lane BMP.
8. Any other surface material added to the lane shall follow the standards set forth in the Semi-permanent Travel Lanes BMP.
9. If topsoil needs to be removed from the travel lane, the standards set forth in the Semi-permanent Travel Lanes BMP shall be followed. Topsoil stockpiles shall follow the Soil Stockpiling BMP.

Maintenance:

1. For the duration of the life of the temporary travel lane, the location and width of the lane shall be maintained to limit soil compaction to the smallest necessary area.
2. Care shall be taken to avoid contamination of the soil with high concentrations of fuel, agricultural chemicals, or other toxic substances that might affect future soil health.
3. Periodic localized maintenance may be required to address minor erosion, potholes and/or rutting but regular (more often than twice per year), or widespread grading or rolling of the lane surface shall follow the Semi-permanent Travel Lane BMP.
4. Erosion on or adjacent to a temporary travel lane shall be addressed promptly.

Rehabilitation:

If rehabilitation of the area is desired, the rehabilitation standards set forth in the Soil Protection Standards shall be followed.

DRAFT