

## Best Management Practice for Improved Travel Lanes

DRAFT: 01/09/2020

### Purpose:

To provide design guidance for the installation, maintenance, and removal of improved travel lanes 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 offer standards for a functional, durable surface that reduces erosion potential and allows infiltration but that is also readily removed and restored to pre-installation conditions with only the use of standard agricultural equipment, understanding that economic and agricultural interests may require a change in land use in the future.

### 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.

“Improved travel lane” means a travel lane meeting the design criteria set forth in this standard.

“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.<sup>1</sup>

### Where Practice Applies:

Improved travel lanes are generally moderate to regular-use travel areas between agricultural infrastructure or in other areas of the farm where unimproved 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. Driving lanes within or adjoining parking areas should follow the Improved Parking Area BMP.

### Design Standards to Qualify for BMP Certification:<sup>2</sup>

The use of improved 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 local and state regulations.

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

<sup>2</sup> 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).

1. The number of improved travel lanes required to service the agricultural areas of the farm shall be minimized to the maximum extent practicable.
2. A scaled plan-view map shall be prepared and submitted to SADC showing the layout of all proposed and existing lanes, designating their status as permanent, improved, or unimproved.
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. Production lanes 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.
9. When moving topsoil, care shall be taken to avoid overhandling and compaction.
10. Low-ground-pressure equipment and ground protection mats shall be used during construction.
11. 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 constructions roads utilizing ground protection mats.
12. All work shall be completed while soil moisture is at or below field moisture capacity.
13. 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.
14. Travel lanes shall follow the contour of the natural terrain to the maximum extent practicable.
15. 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.
16. Production 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 water and must extend sufficiently beyond the gravel to ensure native soil/surface material separation. The fabric shall be installed per manufacturer's guidelines.
17. Additional layers of pressure-distributing material (i.e. geogrids) may be added.
18. 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.
19. Additional surfacing above the subbase may be added as necessary.
20. Additional road surfacing may include gravel, crushed concrete, cinders, shells or sand more than 2 inches thick, soil, pavers, bricks, blocks, or a mix of synthetic material and soil.
21. 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:**

For the duration of the life of the improved travel lane, a separation shall be maintained between the gravel surface and the native subsoil. There are no particular requirements to keep the lane surface free of sediment. 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.

**Restoration:**

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

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## Best Management Practice for Geotextiles and Geomembranes

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### Purpose:

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

### Definitions:

“Geotextile Fabrics” means permeable, woven and non-woven fabrics, typically used for separation of soil layers, erosion control and weed management.

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

“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 web 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).

“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, pond liners, silage covers.

**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 local and state regulations.

1. Permeable geotextiles (e.g. weed fabric for nursery production)
  - a. Must be readily permeable to water.
  - b. May be placed over native soil with topsoil in place or, if necessary for agricultural purposes, the topsoil may be stockpiled on site according to the Soil Stockpiling BMP.
  - c. Soil compaction outside of normal tillage practices is not permissible before, during, or after installation.
  - d. Any erosion beneath or adjacent to the fabric shall be addressed promptly.
  - e. Use of gravels or other materials below geotextiles are subject to the Improved Parking BMP.
  - f. All grading shall be contained completely within the plow layer.
  - g. Lanes between production areas shall follow the BMPs for Improved Travel Lanes or Unimproved 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 must be implemented to reduce the soil loss to "T" such as 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. Shall be designed, installed, and maintained according to New Jersey Conservation Practice Standards promulgated in the Field Office Technical Guide by the Natural Resources Conservation Service.
  - b. Construction of irrigation ponds, tailwater recovery systems, and manure storage lagoons shall reference the Agricultural Water Impoundment BMP.

**Maintenance:**

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

**Restoration:**

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

## Best Management Practice (BMP) for Unimproved Travel Lanes

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### Purpose:

To provide design guidance for the use of unimproved travel lanes on the preserved premises in a way that allows for current or proposed agricultural uses while minimizing the potential negative impacts on soil health.

### Definitions:

“Travel lane” means a generally linear feature on a farm primarily used for the passage 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.

“Unimproved Travel Lane” means a travel lane meeting the design criteria set forth in this standard.

### Where Practice Applies:

Unimproved 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 Improved Travel Lanes, Improved Parking and Farmyards, and Temporary Parking for additional guidance.

### Design Standards to Qualify for BMP Certification:

The use of unimproved 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 local and state regulations.

1. 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. <sup>1</sup>
2. Surfaces intentionally compacted through the use of sheepsfoot rollers, vibratory compactors, or similar equipment are not eligible for BMP certification.
3. Unimproved travel lanes are not required to have any underlayment to reduce soil compaction, but removable soil protection grids or mats are encouraged.
4. 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 unimproved travel lane but is recommended.
6. Organic mulch or woodchips may be added to the lane surface.

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

7. Crushed shells or sand 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 Improved Travel Lane BMP.
8. Any other surface material added to the lane shall follow the standards set forth in the Improved Travel Lanes BMP.
9. If topsoil needs to be removed from the travel lane, the standards set forth in the Improved Travel Lanes BMP shall be followed. Topsoil stockpiles shall follow the Soil Stockpiling BMP.

**Maintenance:**

For the duration of the life of the unimproved travel lane, the location and width of the lane shall be maintained to limit soil compaction to the smallest necessary area. 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. 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 Improved Travel Lane BMP.

**Restoration:**

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

# Travel Lanes Flow Chart

