

Recycle Florida Today

FDOT Use Of Compost Today And Future

Current Use - Roadside Turf and Landscaping



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FDOT Approaches

- Construction Contracts
 - Embedded in road/bridge contracts
- Stand-alone Landscape Specifications
 - Prescriptive
 - Performance (preferred)
- Asset Maintenance
 - Part of Roadside Turf Management
- Self Perform – Very Little
 - FDOT down from 12K employees to just over 6k
 - FDOT Maintenance work almost 90% privatized

References – July 2017 Construction Specifications

- FDOT Specifications
 - Section 162 Prepared Soil Layer
 - **162-1.1 Finish Soil Layer:** Unless otherwise called for in the Plans, prepare a 6 inch thick layer of existing soil mixed with imported material, if necessary, to achieve the pH and organic matter levels required in Section 987, that is favorable to turf and ground cover growth over areas of the project which are to be seeded, seeded and mulched, or planted, by mixing in an organic material, compost, or commercially available soil amendments.
 - Section 163 Landscape Soil Layer
 - **163-2 Materials.** Provide landscape soil meeting the requirements of 987-2.4.
 - Section 570 Performance Turf
 - **570-2 Materials.** Meet the following requirements:
 - Turf MaterialsSection 981
 - FertilizerSection 982
 - WaterSection 983
 - Section 981 Turf Materials
 - **981-4 Mulch.** The mulch material shall be compost meeting the requirements of Section 987, hardwood barks, shavings or chips; or inorganic mulch materials as approved by the Engineer; or hydraulically applied wood fiber mulch or bonded fiber matrix (BFM) for the establishment of turf material.

References – July 2017 Construction Specifications

- **Section 987 Soil Layer Materials**

- **987-1 Description.** All material shall be suitable for plant growth. The organic matter content of the soil layer after mixing shall be a minimum of 2.5%, a maximum of 10%, in accordance with FM 1-T-267 and have a pH value of 5.5 or greater and less than or equal to 7.0 as determined in accordance with FM 5-550. The organic matter content shall be created using any of the following materials.
- **987-2.3 Compost:** Meet the requirements of Florida Department of Environmental Protection Rule 62.709.550 Type Y (yard waste), Type YM (yard waste and manure), Type A (municipal solid waste compost) or Rule 62.640.850 Type AA (composted biosolids) and have unrestricted distribution.
- **987-2.3.1 Compost for use as a Soil Amendment:** If the electrical conductivity (EC) value of the compost exceeds 4.0dS (mmhos/cm) based on the saturated paste extract method, the compost shall be leached with water prior to application.

References – July 2017 Construction Specifications

- **Section 987 continued...**

- **987-2.3.2 Compost for use as a Mulch:** The compost shall contain no foreign matter, such as glass, plastic or metal shards. The compost shall be slightly coarse to coarse in nature (over half of the solids shall be from particles 1/2 inches in size and no greater than 6 inches). Preference shall be given to compost or mulch made from uncontaminated woody waste materials.
- **987-2.4 Landscape Soil:** Landscape soil must be sandy loam or loamy sand with properties of AASHTO classification A-2-4 or A-4. The soil must have an organic matter content of 5 to 10% using the loss on ignition (LOI) test in accordance with FM 1-T267 from a soil testing laboratory approved in accordance with 105-7. Soil must be free of litter and deleterious substance such as cans, debris, particles greater than 0.50 inches, and rinsate containing lime or toxic materials. Soil must be free of noxious plants or propagules of plants listed in Florida Rule 5B- 57.007, and invasive exotic plants listed under Category I Florida Exotic Plant Pest Council. Where shown in the Plans or when approved by the Engineer, existing soil may be amended with compost or biosolids to meet the requirements of this Section. Use compost in accordance with FDEP Rule 62.709.550 and 62.709.600. Use biosolids in accordance with Florida Rule 62.640.850.

Specifications – Performance Based

- Section 570 – Performance Turf
- Perform all work necessary, including watering and fertilizing, to sustain an established turf until final acceptance, at no additional expense to the Department. Provide the filling, leveling, and repairing of any washed or eroded areas, as may be necessary.
- Established turf is defined as follows:
 - 1. An established root system (leaf blades break before seedlings or sod can be pulled from the soil by hand).
 - 2. No bare spots larger than one square foot.
 - 3. No continuous streaks running perpendicular to the face of the slope.
 - 4. No bare areas comprising more than 1% of any given 1,000 square foot area.
 - 5. No deformation of the turf areas caused by mowing or other Contractor equipment.
 - 6. No exposed sod netting.
 - 7. No pests or noxious weeds.

Specifications – Performance Based

- One year establishment period
- Inspections every 90 days
- Dispute Review Board – Binding
- Six months of the bid list for failure to perform

References – FDOT Maintenance Procedures

- Procedure 850-000-015-j Roadway and Roadside Maintenance
 - **2.0** Turf management consists of the range of integrated management activities used to establish and sustain a turf stand at a desired level of quality. Proper management is critical to the development of successful turf. A high quality turf is usually the result of correct grass selection for the site conditions, proper establishment procedures, and effective cultural practices. General guidelines are listed in the ***Guide for Roadside Vegetation Management***.
 - **2.1** A well-maintained turf stand and ROW can and will reduce the amount and extent of other maintenance activities, such as shoulder work, ditch cleaning, mowing, pipe cleaning, and herbicide application.
- FDOT Guide to Roadside Vegetation Management

FDOT Guide to Roadside Vegetation Management

- **TURF AND TURFGRASSES** Today the importance of erosion control is second only to the need for adequate design and location considerations.
- ... it is imperative that vegetation – normally turf – be used to control erosion with a minimum of delay...
- The complete highway is not a reality until all soil areas are protected with appropriate vegetation.

FDOT Guide to Roadside Vegetation Management

- Soils - Soil characteristics include the soil's composition, texture and structure, fertility, and pH level. Turfgrasses grow best in well-aerated soils with adequate moisture and nutrients. A problem encountered in roadside turf management is that the soils used in roadway construction to meet engineering requirements are not compatible with agronomic needs. Roadway soils must be compacted whereas soils for growing plants need to be well-aerated.
- **Organic matter** includes all dead or decaying material in the soil. Soil with the most organic matter is usually best able to support active plant growth. As it decomposes, organic matter releases nutrients into the soil and helps the soil retain moisture and maintain its structure. Florida's muck soils are very high in organic matter and are generally more productive than the sandy soils.

What Problems Are We Having?

- Poor Turf Establishment



What Problems Are We Having?

- Landscaping Not Thriving



Challenges

- Who's going to do the work – Roadway contractor?
- FDOT does not quantify and pay for amendments
- Soil that is good for roads is not good for plants
- Definition of establishment
 - Defining – Grade/blades per SF?
 - Measuring – Grade?
 - Thriving vs surviving
- Prequalification of Contractors – Currently 30
 - <https://fdotwp1.dot.state.fl.us/contractorprequalification/public/PrequalifiedVendorSearchPrintView.aspx>
- Rigid enforcement – not easy or popular

Future Opportunities

- Work with roadway and landscape contractors to make sure they know you exist and what you can supply.
- Work with our asset maintenance contractors.....
- Help them understand your product(s) can help them meet our specs and get their work “established”, paid and released!

Bottom Line

Help our contractors help FDOT
solve our problems

Questions?

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