FDOT District 3
Roadside Vegetation Management Plan
2018

Purpose: The purpose of this plan is to create a uniform program of vegetation management within District 3 that demonstrates good stewardship and environmental sustainability within a framework of prudent and cost effective management. Healthy, sustainable roadside vegetation within the transportation corridor is good for the environment by stabilizing soils, conserving and filtering runoff water, purifying air by absorbing pollutants and returning oxygen to the atmosphere, and providing habitat for native insect pollinators. Other economic benefits include screening from objectionable views, and stimulating aesthetic responses in travelers to reinforce the growing nature tourism industry in the District.

Criteria: The five basic criteria that were used to develop this management plan for roadside vegetation are: safety, erosion control, functionality, environmental stewardship, and aesthetics. All of these are addressed in the referenced documents, attached:

Appendix:

A - Environmental Policy
B - Wildflower Management Program
C – Performance Turf Management; SS5703000
D - Chemical Vegetation Control; SS5803300
E - Tree Trimming and Removal; SS5804000
F - Roadside Mowing; SS1044000
G - Roadside Litter Removal; SS1103000
H - Fertilizing; SS5705000
I – Sodding; SS5750000
J – A Guide for Roadside Vegetation Management
K - Maintenance Rating Program Standards, Vegetation and Aesthetics
L - FDOT3 Exotic Invasive Plants Field Guide
M – Invasive Plant Treatment Notification Letter and FISP Flyer
N – District Three Natural Plant Communities

Roadside Maintenance Practices: Recommendations for maintenance practices, including aeration, fertilization, weed control, overseeding, and mowing, are presented for three zones of the roadside cross section: recoverable terrain, ditches and pond edges, and backslopes.

Each Maintenance Unit shall monitor winter weeds and consult with the District Vegetation Management Specialist to determine if there is a need to issue a mowing work document on February 1ST with the intent of cleaning up winter weeds. Subsequently, and no later than March 10th, the Operations Center Manager and the District Vegetation Management Specialist shall jointly determine the need to issue a mowing work document with the intent of suppressing rye grass from going to seed. At no time shall roadside mowing for Rural Limited Access, Rural Arterial, or Urban Limited Access exceed the Maintenance Rating Program allowable height by more than 6" and Urban Arterial shall not exceed Maintenance Rating Program allowable height by more than 3”.

Each Maintenance Unit shall monitor and control vegetation on fences in a manner that allows the fence to function as intended and permits inspection of all fencing components to occur. In urban areas where Department maintained fence adjoins or is adjacent to fence that is kept vegetation free; the Maintenance Unit shall keep the Department maintained fence free of vegetation.

Vegetation in recoverable terrain and other regularly mowed areas, or the T-1 zone as described in Appendix J, should be dominated by planted turf grasses and legumes. Field Clover (*Trifolium campestre*), Low Hop Clover (*Trifolium dubium*), Crimson Clover (*Trifolium incarnatum*), Dutch Clover (*Trifolium repens*), Perennial Peanut (*Arachis glabrata*), low growing Ticktrefoils (*Desmodium incanum*, D. *triflorum*), Florida Sensitive Brier (*Mimosa quadrivalvis v. angustata*) and Powderpuff Mimosa (*Mimosa strigullosa*) are appropriate legumes to accompany Bahia and Bermuda grasses. The need for aeration and fertilization can be reduced by the encouragement of these legumes. Adjustment of mowing heights within the parameters of the MRP requirements at seed setting times can serve to encourage their spread. Sept. /Oct. overseeding of cool season legumes can also be helpful for weed suppression in areas of sparse turf.

Aeration, liming, and fertilization should be on an as needed basis as determined from periodic site inspections and soil sampling. Soil samples may be submitted to the District Vegetation Management Specialist.

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Desirable Legumes for Improvement of Turf in T-1 Zones

 **FIELD CLOVER**	 **LOW HOP CLOVER**
 **CRIMSON CLOVER**	 **DUTCH CLOVER**
 **PERENNIAL PEANUT**	 **TICKTREFOIL**
 **THREEFLOWER TICKTREFOIL**	 **POWDERPUFF MIMOSA**

Vegetation outside of recoverable terrain, or the T-2 zone as described in Appendix J, should be dominated by native grasses and wildflowers to minimize maintenance requirements and to sustain successful cover. Management plans for ditches, pond slopes and backslopes should be tailored to habitat and soil types. Analysis of existing species should be done and a determination made concerning the appropriate species targeted for increase as well as undesirable species to be controlled. Decisions concerning the scheduling of mowing for wet ditches and backslopes should be based on the goal of minimal damage resulting from equipment as well as desiring to increase the populations of desirable species. Inclusion of vulnerable soils within the limits of the regular mowing cycle results in chronic damage and decline of the vegetative cover. Vulnerable soils may include both the consistently wet and dry soil types illustrated in Photos #1 and # 2. Limiting mowing within the backslope zone to annual or biannual "clean up" cycles encourages natural vegetative cover, and also suppresses undesirable woody vegetation as illustrated by photos #3 and #4.

Photo #1

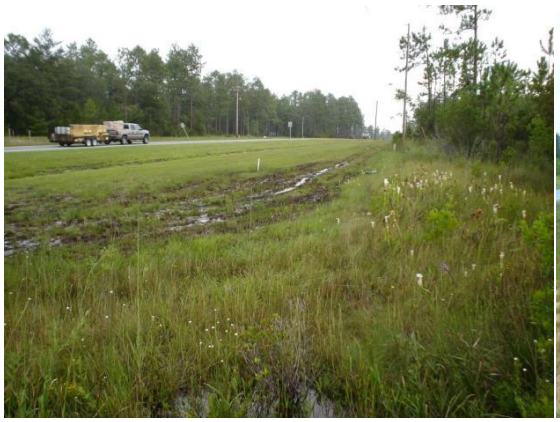


Photo #2

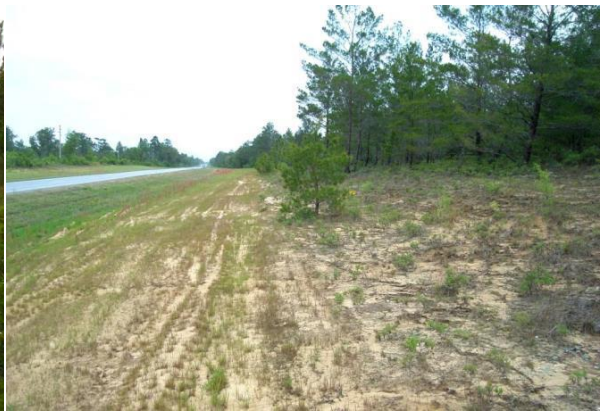


Photo #3

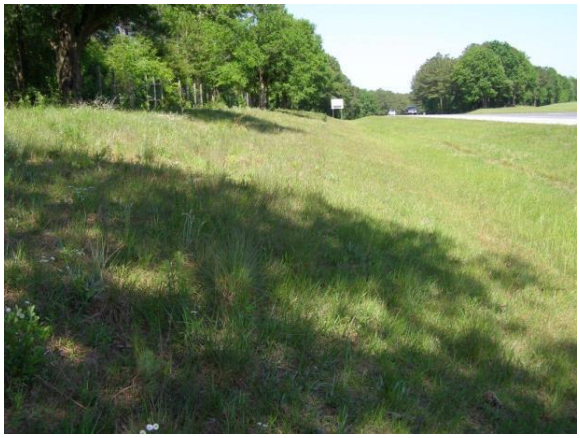
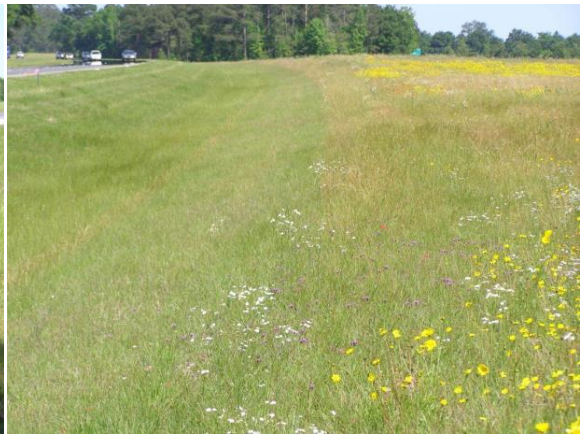


Photo #4

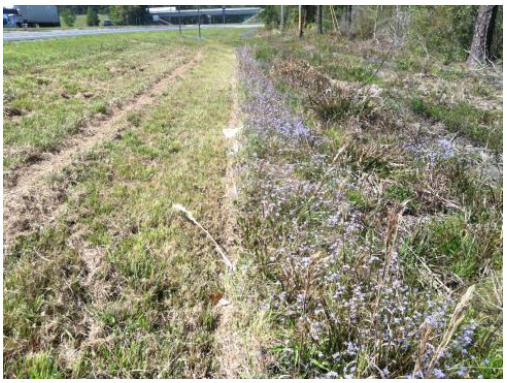


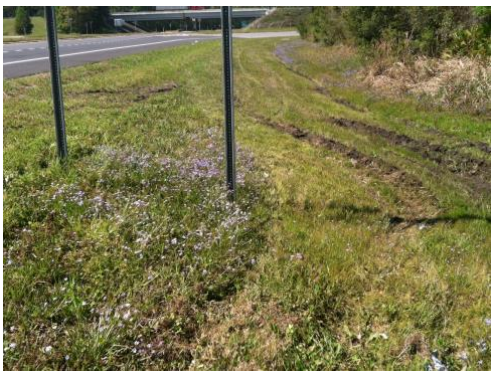
Management of Wildflower Communities

Management for increase of existing wildflowers should include mowing plans that take into account the flowering and seed setting times for the targeted species or groups of species. Monitoring of wildflower populations to identify appropriate mowing timing and heights should occur near the start and end dates for general flowering periods. A general rule of thumb is to refrain from mowing at the height of the inflorescences from two weeks before the start date and two weeks after the end date of the flowering period.

Native vegetation is preferable to planted turf grasses in the backslope zone and other areas outside of clear zones and recoverable terrain. Naturally adapted to native soils, these plants provide successful erosion control without supplemental fertilization or aeration. With biannual mowing many of these species can be maintained at heights below MRP restrictions for slope mowing of 24".

Timing of mowing cycles is also an excellent tool for native wildflower preservation. Areas where significant stands of naturally occurring wildflowers exist may be identified and given special consideration as wildflower preservation sites. These sites are typically found in rights of way that are adjacent to natural communities. The District Vegetation Management Specialist (DVMS) shall be consulted for assistance in identifying those sites.





Herbicide Use and the Control of Invasive Plants: The District encourages the application of herbicides as part of the vegetation management program. Chemical control of exotic invasive plants and other undesirables in T-2 areas shall be site specific and applied by licensed applicators or supervised by a licensed applicator that have received training on all herbicide policies of the Department. High volume broadcast application of herbicide is prohibited. However, broadcast applications, including wet blade or wicking mower applications to control certain invasive plants, like cogon grass, may be allowed by submitting a plan to the Director of the Office of Maintenance. The intent of this policy is outlined in the Voluntary Codes of Conduct to Minimize the Spread of Invasive Plants published in the Guide to Chemical Weed and Grass Control. Plants that are identified for particular eradication include Mimosa (*Albizia julibrissin*), Chinaberry (*Melia azedarach*), Chinese Tallowtree (*Triadica sebifera*), Chinese Privet (*Ligustrum sinense*), Air Potato (*Dioscorea bulbifera*), Japanese Honeysuckle (*Lonicera japonica*), Kudzu (*Pueraria Montana*), Cogongrass (*Imperata cylindrica*), Japanese Climbing Fern (*Lygodium japonicum*), and Tropical Soda Apple (*Solanum viarum*). Refer to Appendix L for an identification field guide for these plants. Surveys shall be conducted annually to determine the extent of the presence of these species on the District's roadways. Areas identified in the survey shall be treated within 90 days. An annual report from each Maintenance Unit shall be submitted to the District Landscape Project

Manager in June. This report should summarize the invasive species control activities for the past year with information by county, section number, state road number, mile post, location, GPS coordinates, herbicide(s) with active ingredients listed, any adjuvants included, rate of application, license under which the herbicide was applied.

Weeds that have become particularly problematic in District Three include Ragweed (*Ambrosia spp.*), Musky Mint (*Hyptis mutabilis*), Paleseed Plantain (*Plantago virginica*), Sorrell (*Rumex spp*), Horseweed (*Conyza spp*.) and Ryegrass (*Lolium spp*). These weeds inhibit the growth of desirable vegetation and become the dominant cover unless suppressed and controlled. These weeds are ordinarily controlled by a culture of proper management that benefits turfgrasses over other plants, but sometimes scalping or other soil disturbances causes an opportunity for the growth of these weeds. In cases such as this, herbicide treatments may be necessary to suppress the weeds. If infestations are thick with weeds with little or no grass present, an application of a non-selective herbicide such as glyphosate (Round-up) is appropriate; if some grass is present at the site, a selective herbicide that targets broadleaf plants is more desirable. These treatments should always be followed up with overseeding of desirable species of turfgrass or legumes to combat re-infestation from the seed bank. Warm season weeds such as Ragweed and Musky Mint should be overseeded with warm season grasses such as Bahia or Bermuda. The cool season weeds like Plantain, Sorrell, and Ryegrass should be overseeded with nurse crops of clover, either Crimson Clover or Dutch Clover and then reseeded with turfgrass during the following warm season. In high traffic areas where a more aesthetic alternative is desired, Perennial Peanut may be sprigged into the soil to replace the weed cover.

Plants such as Cogon Grass and Kudzu that have been identified by the Florida Exotic Pest Plant Council as exotic invasive plants should be treated with selective herbicides or specific tank mixes designed to eradicate each species. For instance, Cogon Grass is best killed with a tank mix of Glyphosate (Round-up) and 2-4-D at a rate of 3% and 1 1/2% respectively; Kudzu is best killed with repeated applications of Transline or other specialty herbicide that targets legumes. A more complete list of exotic invasive plants can be found in Appendix L.

When infestations of exotic invasive plants cross the right of way onto private property, adjacent landowners shall be notified of the Department's control efforts with the standard letter and accompanying flyer from the Florida Invasive Species Partnership found in Appendix M.

In the case of exotic invasive plants, monitoring for re-treatment may be necessary and should be followed up with overseeding of desirable turfgrasses or legumes only after complete eradication of the weeds. Temporary erosion control measures may be required until completion of the herbicide program.

A daily ***Herbicide Application Log (Form No. 850-000-15)*** is required for any herbicide application. The log shall be filled out correctly. All herbicide applicators shall hold a current license with the Florida Department of Agriculture or work directly under a current licensed applicator in the following 3 categories: core curriculum, right of way, and aquatics. A copy of the license shall be on file. All equipment shall be calibrated as often as necessary to ensure desired application rate is achieved and appropriately documented on the log. Wind speed should be taken using an anemometer and recorded in units of miles per hour before herbicide application begins and every hour thereafter. If the wind speed obtained is greater than the wind speeds recommended in the product label, you shall not spray.

Tree Trimming and Understory Removal: Tree trimming and understory removal shall be conducted according to the Florida Highway Landscape Guide and Supplemental Specification 580-40, performing all work meeting the requirements of recognized and approved arboriculture principles with emphasis on tree health and symmetry. Boom mowers with rotary or flail cutting heads shall not be used. Sites to receive understory removal shall be first inventoried by the DVMS to identify species potentially valuable for highway beautification and/or state listed protected species. These plants shall be marked and protected from harm by clearing operations. Plants identified for particular protection include (but not limited to) Devil's Walking Stick (*Aralia spinosa*), Native Azaleas (*Rhododendron sp.*), Dogwood (*Cornus florida*), Redbud (*Cercis canadensis*), Crabapple (*Malus angustifolia*), Hawthorne (*Crataegus sp*.), Blueberries (*Vaccinium sp*.), Native Plums (*Prunus sp*.), Red Buckeye (*Aesculus pavia*), Fringe Tree (*Chionanthus virginicus*), Oak Leaf Hydrangea (*Hydrangea quercifolia*), Florida Anise (*Illicium floridanum*), Ashe Magnolia (*Magnolia ashei*), American Snowbell (*Styrax americanum*), and Viburnums (*Viburnum sp.*). Understory removal of undesirable species shall be accompanied with herbicide cut stump treatment to prevent regrowth.

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Protected Understory Plants in Forested Backslopes

 **DEVIL'S WALKING STICK**	 **FLORIDA FLAME AZELA**
 **DOGWOOD**	 **RED BUD**
 **SOUTHERN CRABAPPLE**	 **YELLOW HAWTHORNE**
 **SPARKLEBERRY**	 **CHICKASAW PLUM**
 **RED BUCKEYE**	 **FRINGE TREE**
 **OAKLEAF HYDRANGEA**	 **FLORIDA ANISE**
 **AMERICAN SNOWBELL**	 **RUSTY BLACKHAW**

Undesirable understory species include both exotic and native invasive species. Shrubs causing the most problem are Privet (*Ligustrum sinense*), followed by Silverthorn (*Eleagnus spp.*), Tree Ligustrum (*Ligustrum lucidum*) and Nandina (*Nandina domestica*). Understory trees that should be removed are Chinaberry (*Melia azedarach*), Mimosa (*Albizia julibrissin*), and Tallowtree (*Triadica sebifera*). Problem vines include Kudzu, (*Pueraria montana*), Japanese Honeysuckle (*Lonicera japonica*), Japanese Climbing Fern (*Lygodium japonicum*) and Summergrape (*Vitis aestivalis*). Refer to Appendix L for identification information and photos of these problem plants.

Removal of branches from trees shall be performed with minimum damage, cutting closely to the branch collar and with even cuts perpendicular to the branch to avoid splitting of wood and bark.

Trees shall be pruned in such a manner as to maintain the natural form and character of the species. If this is not possible, it is preferable to remove the tree completely.

Newly planted trees in landscape projects and dead or dying trees within the right-of-way that could fall in the clear zone, across the right-of way fence, or present a hazard to vehicles, adjacent property owners or pedestrians shall receive regular reduction pruning or be removed, as may be applicable. These trees shall be monitored on three to five year intervals for structural pruning requirements. The DVMS or Project Certified Arborist shall be consulted prior to performing such pruning and/or removal.

Appendix A

Appendix B

Appendix C

Appendix D

Appendix E

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Appendix F

Appendix G

Appendix H

Appendix I

Appendix J

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Appendix K

Appendix L

Appendix M

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Appendix N