



"BD545-26: Native Roadside Wildflowers in Rural Areas: Developing Best Management Practices for Establishment of Plantings by Seed and Enhancement of Naturally-Occurring Populations"

Project Information

Project Number	Total Budget	Start Date	End Date
BD545-26	\$215,947.00	08/23/2004	12/31/2007

Sponsor Agency	Sponsor Contact	Contractor	Contractor Contact
Florida Department of Transportation	Jeff Caster	University of Florida	Jeffrey Norcini

Abstract

Increasing the use of native wildflower seed derived from naturally occurring populations in Florida and produced in Florida is consistent with the ecosystem management goals of the Florida Department of Transportation (FDOT) and has the potential to reduce maintenance costs. FDOT Environmental Management Office goals are to purchase (from Florida sources) and plant native wildflower seed in planting programs, to the extent that quality seed is available and such a program practicable. FDOT purchased such seed in 2002, 2003, and 2004. However, the nature of this seed makes it relatively expensive compared to seed from out-of-state commercial suppliers. While plantings of Florida ecotypes of native wildflowers are expected to be sustainable for several years or more, scientific evidence is needed to show that these populations are indeed sustainable when established and managed using appropriate practices. Current recommendations for the establishment and maintenance of roadside wildflower plantings are based mainly on FDOT's experience with seed purchased from out-of-state suppliers, seed that is derived from plants that are not adapted to Florida's climate. The goals of this project are to (1) evaluate stand establishment and performance over a 3-year period for plantings of Florida ecotypes of native wildflowers under simulated roadside conditions; (2) evaluate management methods that will result in the preservation and spread of naturally-occurring roadside wildflower populations in South Florida; (3) develop best management practices (BMP) for species studied in this project; and (4) estimate the costs needed to implement the BMPs.

Product Information

Product Name	Product Number	Due Date	Completion Status
Native Roadside Wildflowers in Rural Areas	BD545-26	12/31/2007	Not Delivered

Product Implementation Status

Product Name	Status	Date Implemented	Implementation Cost	Reason Not Implemented
Native Roadside Wildflowers in Rural Areas	Implemented		\$0.00	Pending

Performance Measures

Performance Measure Name	Project Performance
Number of Technical Products Implemented	1
Benefit-Cost Ratio	8.16:1
Dollars Saved	\$1,792,800.00
Number of Environment Products Implemented	1
Number of Cost Saving Products Implemented	1

Individual Project Report-Calculation Details

"BD545-26 : Native Roadside Wildflowers in Rural Areas"

Section I. Estimation Description

Description

Developing Best Management Practices for Establishment of Native Wildflowers In Rural Areas.

Section II. Key Data, Assumptions, and Information Sources

Description	Value	Source
Year of cost, wage, and rental rates used in estimations below:	2008	FDOT
First year that benefit(s) were received or are anticipated:	2008	FDOT
Year in which maximum annual implementation is anticipated:	2010	FDOT
Anticipated life of product before obsolescence:	7	RPM
Discount rate selected for cost and benefit calculations:	0.0	Gas prices will not discount in the future.
Currently, right away and median areas on Interstates and State routes must be mowed to keep the grass short and neat.		MRP
Gas prices are currently at \$3.55 per gallon and rising. Diesel prices are currently at \$4.10.		Highway Gas Prices from bts.gov February 2008
Right of way and medians need to be mowed between 5 and 7 times a year depending on conditions. This costs approximately \$249 per linear mile of Interstate to mow		FDOT Maintenece.
The most rural stretch of Interstate 10 across northern Florida is from Pensacola to Jacksonville. A distance of 360 miles. For the purposes of this analysis we will assume 300 miles.		Google Maps
If the number of mowings were reduced from 5 to 7(current rate) to 2. Native wildflowers could establish themselves via seeding or naturally, resulting in lower maintenance costs.		Reseach
The average cost to mow one linear mile is \$249. The cost to mow 300 miles would be \$74,700. To mow 300 miles 5 to 7 times a year would be \$373,500 and \$522,900 respectively.		FDOT maintenance.
The cost of gas and diesel is rising and is projected to do so in the near future. Therefore the cost of mowing will also rise.		Highway Gas Prices from bts.gov February 2008
Less mowing means less exposure to highway traffic for mowing crews.		FDOT
Less mowing means reduced vehicle emissions		FDOT
Florida has 12,000 miles of State Highway. It has 186,000 acres of right away. For the purposes of this study we are only calculating for 300 miles of I-10. This will include about 5,000 acres of right away.		www.dot.state.fl.us/emo 2004
Increased dense vegetation along highways will reduce erosion caused by stormwater run off.		www.dot.state.fl.us/emo 2004

Section III. Calculation of Annual Benefits when Fully Implemented: Current Situation Minus Future Situation

Current Situation

Category	Quantity	Unit & Description	Rate	Total
Operating Costs	1,800.00	Total miles due to mowing a 300 mile section of I-10 ,6(six) times a year.	\$249.00	\$448,200.00
Current Situation-Agency Costs				\$448,200.00
Current Situation-Fatalities				0.00
Current Situation-Crashes				0.00

Estimated Future Situation

Category	Quantity	Unit & Description	Rate	Total
Operating Costs	600.00	Total mileage if a 300 miles section of I-10 is reduced to 2 (two) mowings annually.	\$249.00	\$149,400.00
Estimated Future Situation-Agency Costs				\$149,400.00
Estimated Future Situation-Implementation Costs				\$0.00
Estimated Future Situation-Fatalities				0.00

Individual Project Report-Calculation Details

Estimated Future Situation-Crashes

0.00

Section IV. Estimated Benefits From Research Product

Year	Adjusted Agency Cost Savings	Lives Saved	Reduction in Crashes
Annual Benefits During Implementation Period ⁽¹⁾⁽²⁾			
2008	\$99,600.00	0	0
2009	\$199,200.00	0	0
Annual Benefits After Agency-wide Implementation Achieved ⁽³⁾			
2010	\$298,800.00	0	0
2011	\$298,800.00	0	0
2012	\$298,800.00	0	0
2013	\$298,800.00	0	0
2014	\$298,800.00	0	0
Total Estimated Benefits			
	\$1,792,800	0	0

1 - A straight-line increase in annual implementation is assumed.

2 - Costs designated as implementation costs are evenly distributed over the implementation period.

3 - Individual annual determinations are based on a single-year benefit estimation that is assumed to be repeated, or it may be based on the average of known future-year quantities, if this information is available.