

FROM ROADS TO ROOTS:

A Review of Florida's Highway Landscape Spending

Florida
TaxWatch



September 2024





106 North Bronough Street, Tallahassee, FL 32301 floridataxwatch.org o: 850.222.5052 f: 850.222.7476

Piyush Patel
Chairman of the Board of Trustees

Dominic M. Calabro
President & Chief Executive Officer

DEAR FELLOW TAXPAYER,

Florida is the fastest growing state in the nation, with a projected population of 25.7 million residents by 2035. Each new resident adds demand for the use of roads and highways. Continual development of the state's transportation network is critical to limit traffic congestion and to move people and goods safely and efficiently throughout the state.

Each year, Florida makes significant investments in transportation; however, the allocated tax dollars are not used for road work alone. Pursuant to s.334.044(26), F.S., at least 1.5 percent of transportation construction spending must be used to purchase plant materials for highway landscaping. Considering the Florida Department of Transportation (FDOT) received \$13.6 billion for its Work Program in FY 2023-24, 1.5 percent amounts to more than \$200 million of taxpayer dollars.

Highway landscaping serves legitimate purposes. An effective highway landscape stabilizes embankments, minimizes maintenance needs, provides barriers between roads and community developments, supports local ecosystem activities, lowers temperatures, and creates visually appealing gateways to attract businesses and tourists to local communities. Although highway landscaping is undoubtedly valuable, Florida TaxWatch finds it odd that the legislature established a minimum spending threshold but no upper limit on landscape spending. This statute should be reviewed.

Florida TaxWatch undertakes this independent research project to better understand how and how much FDOT spends on landscaping each year. We look forward to discussing our findings with policy leaders as they prepare for the 2025 Legislative Session.

Respectfully,

Dominic M. Calabro
President & Chief Executive Officer

TABLE OF CONTENTS

Introduction.....	1
Who is Responsible for Highway Landscaping?	2
What is the Cost to Florida Taxpayers?.....	3
<i>Ancillary Costs: Long-Term Maintenance</i>	4
How Are the Tax Dollars Spent?	5
<i>Selecting Plants</i>	5
<i>Treatment of Existing Plants</i>	6
Looking Ahead: What Policy Changes Should be Considered?.....	7
Conclusions & Recommendations	8

I want to make sure that the America we see from
these major highways is a beautiful America.¹

— President Lyndon B. Johnson

INTRODUCTION

In 1965, the United States enacted the Highway Beautification Act (“the Act”) to preserve the natural aesthetic bordering the nation’s roadways. The Act created federal funding for landscaping projects along highways that were constructed with federal aid; however, the Act imposed no requirement for the states to participate. The State of Florida—with a constitution that deems “it shall be the policy of the state to conserve and protect its natural resources and scenic beauty”—joined the nation’s highway beautification effort.

In 1999, the Florida legislature passed a landscape spending requirement upon highway construction projects, requiring one percent of highway construction spending be allocated to landscaping projects. As amended, section 334.044(26), Florida Statutes, now requires that no less than 1.5 percent of the amount contracted for transportation construction projects statewide be programmed for spending by FDOT to

purchase plant materials. The statute requires that plant materials be purchased from Florida commercial nurseries and 50 percent be used on the purchase of large plant materials.²

The benefits of highway landscaping cannot be overemphasized. Highway landscaping protects taxpayers’ investment in roadway construction. Plants along the highway limit erosion, which in turn reduces maintenance costs and hazards and increases the lifespan of the roads. Additionally, highway landscaping is an economic driver. In 2014, a study on the economic impacts of highway landscaping projects identified \$58 million in value-added impacts from 2008-2013.³ The economic impact does not stop there; as visitors enter the state, their first impression comes from the window of a car. Building a sense of culture and beauty along state highways can encourage prospective businesses and tourists to spend more time in the state of Florida.

“To provide for the enhancement of environmental benefits, including air and water quality; to prevent roadside erosion; to conserve the natural roadside growth and scenery; and to provide for the implementation and maintenance of roadside conservation, enhancement, and stabilization programs. **At least 1.5 percent of the amount contracted for construction projects shall be allocated by the department on a statewide basis for the purchase of plant materials, with, to the greatest extent practical, a minimum of 50 percent of these funds for large plant materials and the remaining funds for other plant materials.** All such plant materials shall be purchased from Florida commercial nursery stock in this state on a uniform competitive bid basis. The department will develop grades and standards for landscaping materials purchased through this process. To accomplish these activities, the department may contract with nonprofit organizations having the primary purpose of developing youth employment opportunities.”

—§334.044(26) Fla. Stat. (2023)

¹ Statement by President Lyndon B. Johnson announcing his America the Beautiful initiative in January 1965.

² §334.044(26) Fla. Stat. (2023).

³ Hayk Khachatryan, “Investigation of Economic Impacts of Florida’s Highway Beautification Program,” May 2014.

Allocations for transportation projects are growing but the amount of right-of-way bordering the highway is mostly stagnated. In FY2014-15, Florida's budget allocated \$9.2 billion to the FDOT Work Program.⁴ In FY2023-24, the FDOT Work Program received \$13.6 billion, a 49 percent increase from nine years prior.⁵ As the funding for the FDOT Work Program increases—in response to a rapidly growing population and inflated construction costs—it is worth evaluating whether such a significant share of the allocated funds should be statutorily required to go toward the purchase of landscaping materials.

Florida TaxWatch undertakes this independent research project to better understand how and how much FDOT spends on landscaping each year and to consider whether the current statute is the optimal way to achieve the benefits of highway landscaping. Ancillary issues, such as the cost and procedures for maintaining these plants, are also examined.

WHO IS RESPONSIBLE FOR HIGHWAY LANDSCAPING?

FDOT is divided into eight districts: seven regional districts and one statewide district, referred to as the Florida Turnpike Enterprise (FTE) district (Figure 1). The FDOT Work Program Development and Operations Office keeps the districts accountable for collectively reaching the statewide target for landscape (e.g., plants) spending. Districts can receive permission from the State Transportation Landscape Architect to program less than 1.5 percent on landscaping, as long as the amount programmed does not jeopardize attaining the 1.5 percent statewide goal.⁶

The landscape projects for each region are programmed by the District Landscape Architects. The District Landscape Architects establish criteria to prioritize local landscaping needs and typically provide preference to projects with a local governing entity that is willing, and financially capable of, managing long-term maintenance costs. For example, the FTE statewide district calculates a weighted numerical score for each interchange, considering traffic volumes; proximity to major commercial, cultural, or recreational features; existing vegetation; quality ecosystem services; and whether the current landscaping adheres to the department's design principals.⁷

⁴ Florida TaxWatch, The Taxpayer's Pocket Guide to Florida's FY2014-15 State Budget, June 2014.

⁵ Florida TaxWatch, The Taxpayer's Guide to Florida's FY2023-24 State Budget, July 2023.

⁶ The Florida Senate, Issue Brief 2012-223: Highway Beautification and Landscaping Program, September 2011.

⁷ Florida's Turnpike Enterprise, Landscape Program Master Plan,



Figure 1.

Florida Department of Transportation is Divided into Seven Regional Districts and One Statewide District, Each of Which is Responsible for Landscaping Projects



Source: Florida Department of Transportation

WHAT IS THE COST TO FLORIDA TAXPAYERS?

The statewide 1.5 percent programmed spending requirement is estimated by an automated process that uses the Work Program Administration (WPA), Long Range Estimate (LRE), and TRNS*PORT systems. The process tracks both present-day compliance and planned compliance based on FDOT's Five-Year tentative work program. Programmed plant material costs for the following types of projects contribute to the minimum requirement:

- Stand-alone landscape contracts or projects,⁸ excluding use of local funds;
- Landscape estimates included in the lump sum and design-build contracts; and
- Beautification grant program and other landscape projects funded with state or federal funds but performed by local agency agreements.

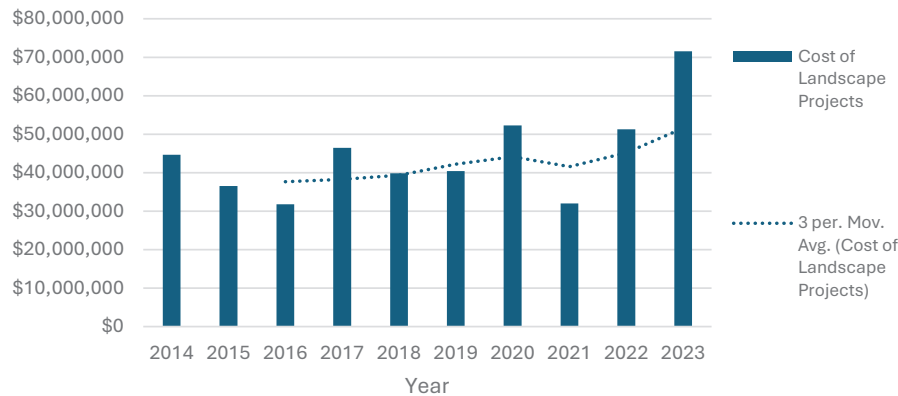
Certain landscaping costs are not considered for the statewide minimum requirement, such as grass and sodding listed as separate pay items within a construction project. Additionally, planning associated with landscaping, such as preliminary engineering and construction or inspections, do not contribute to the statewide requirement.

In response to a request from Florida TaxWatch, FDOT provided information documenting the evolution of highway beautification costs since 2014 (Figure 2). The moving three-year average increases by 37 percent from 2014 to 2023. In part, this trend is due to particularly expensive projects in 2020 and 2023, including the creation of expressways, the construction of the Howard Frankland Bridge, and the widening of state roads and turnpike lanes.

⁸ Includes contracts that are classified in work mix 1070.

Figure 2.

Spending on Landscaping Projects has Grown by 60 Percent Since 2014



Source: Florida Department of Transportation

Consistent with §334.044(26), FDOT programs spending on plant materials based on current and planned costs for the Five-Year Tentative Work Program; however, unforeseen cost differences, whether the cost of construction was higher than anticipated or the cost of plant materials was lower than anticipated, can result in the actual cost incurred comprising less than 1.5 percent of construction allocations. From 2014-2023, the final costs of landscaping projects ranged from 1.2 percent to 1.6 percent of construction costs.⁹

ANCILLARY COSTS: LONG-TERM MAINTENANCE

The 1.5 percent programmed spending requirement *does not* include ancillary costs, such as watering, sodding, and pruning. Providing long-term maintenance is crucial to protecting the state's large investment in plant materials. Without proper care, the plants may grow unruly or die.

To limit the long-term costs of landscape management, the FDOT carefully considers a landscape's intensity of the design, plant choice, region, and size of right-of-way. According to the FTE Landscape Program Master Plan, the Department's policy is to keep the maintenance cost for new projects below six dollars per square yard. To do so, at least 50 percent of a landscape design should be comprised of low intensity vegetation, such as native pines, mid-level shrubs, and grass.¹⁰

⁹ Data provided by the Florida Department of Transportation.

¹⁰ Florida Turnpike Enterprise, Landscape Program Master Plan, 2017.

¹¹ Florida Department of Transportation, Design Manual: 273 Landscape Maintenance Guide, January 2024.

¹² Florida Administrative Code, 14-40.003 Landscape Projects, June 2018.

¹³ Florida Department of Transportation, FDOT Design Manual 270 Planting Designs, January 2024. See also, Florida Department of Transportation, Florida Highway Landscape Guide, April 1995.

¹⁴ Florida Department of Transportation, Section 580 Landscaping, revised August 5, 2021.

All proposed landscape plans must be accompanied by comprehensive maintenance plans.¹¹ The maintenance plan should promote the health of plants and keep the plants from becoming overgrown, maintaining sight distance requirements and ensuring roadway features (such as signs and billboards) are not blocked.¹²

“The maintenance plan is intended to make sure that the landscape architect and the agency responsible for maintenance understand what resources and practices will be necessary to maintain the landscape in a safe and vigorous condition that meets the project objectives many years after construction is completed.”

— FDOT Plans Preparation Manual, Volume 1.

During the first couple of years after the completion of a landscaping project, certain features remain the responsibility of the contractor. Large plants are most vulnerable during their first two years planted, known as the “establishment period.” During this time, the contractor is responsible for managing the growth, including applying fertilizer and pesticides.

After establishment, long-term maintenance for highway landscaping becomes the responsibility of FDOT or local governmental entities. If a local group or governmental entity requests a landscape design that requires elevated levels of care, they are typically required to take responsibility for the landscape by signing a maintenance agreement.¹³ If FDOT is responsible, the maintenance plan should include a cost estimate based on expected maintenance activities. If the contractor fails to comply, their contracted amount incurs daily deductions.¹⁴

Each landscape must comply with the FDOT Maintenance Rating Program (MRP).¹⁵ Each designated maintenance area is sampled three times per available mile, with each sample point stretching 528 feet in length (0.1 mile). The sample points evaluated are based on five categories: roadway (e.g., potholes and depressions); traffic services (e.g., raised pavement markers and striping); vegetation/aesthetic (e.g., tree trimming, litter removal, turf conditions); roadside (e.g., shoulder pavements); and drainage (e.g., inlets, outfall ditch). Ranked from zero to 100, each category is typically considered acceptable with a ranking of 80 or higher, and if the ranking is lower than 80, the area may be identified in need of additional funding to maintain compliance.¹⁶

For vegetation/aesthetic, the FDOT MRP states that 90 percent of landscape vegetation—and *any* landscaping within the limits of the clear sight window—should be maintained in a healthy, attractive condition at any given moment. Unhealthy or unattractive appearance includes presence of weeds, dead or dying plants, and overgrown appearance. Additionally, trees must be trimmed to avoid obscuring signs or low overhanging above roadway.¹⁷ In the latest annual maintenance summary report (2021-2022), nearly every district¹⁸ had a score higher than 80, with the highest district-wide score being 89 in District 4 and the FTE Turnpike District.¹⁹

HOW ARE THE TAX DOLLARS SPENT?

Each FDOT district has a landscape architect responsible for the final approval of landscape plans. The Landscape Architect approves plans based on regional preferences, planting zones, and experience. The FDOT Design Manual (2024) outlines the current expectations for landscape plans. According to the most recent edition of FDOT's Design Manual, landscape designs should satisfy the following requirements:

- Collectively, large plants (i.e., shrubs, trees, and palms) should compose 50 percent or more of the value for all plant purchases;
- A diverse mix of plants is chosen, prioritizing plants that are resistant to destructive insects and diseases;
- Community features, such as outdoor advertising signs and roadway signs, remain visible to drivers; and
- Utilities and stormwater systems are not disrupted.²⁰

SELECTING PLANTS

Often, indigenous plant species are prioritized because they support local ecosystem activities and require little maintenance. As a large state, the list of preferred plants may differ depending on whether the project area is located in north, central, or south Florida. In 1995, FDOT published a list of recommended highway plant materials (Table 1).

Plants should also have a diversity of age and genetics. According to the FTE Landscape Program Master Plan, the mix of plants should have no more than 10 percent of the same species, 20 percent of the same genus, and 30 percent of the same family.²¹ By avoiding monocultures, plants are more resilient to widespread disease, provide better ecosystem services, and often require less maintenance.

As a variety of plants are selected, attention should be given to the overall intensity level of the landscape design. Low intensity landscaping is characterized by native plants that support—and can be supported by—the natural ecosystem, limiting the need for long-term maintenance. Moderate

15 Florida Department of Transportation, Maintenance Rating Program Handbook, 2023.

16 Center for Advanced Transportation Systems Simulation at the University of Central Florida, Florida Maintenance Rating Program (MRP) Assessment and Enhancement, May 2008.

17 Florida Department of Transportation, Maintenance Rating Program Handbook, 2023.

18 District 2 scored a 75.

19 Florida Department of Transportation, Maintenance Rating Program Level of Maintenance Summary Annual 2021-2022.

20 Florida Department of Transportation, Design Manual, January 2024.

21 Florida Turnpike Enterprise, Landscape Program Master Plan.

intensity landscaping may require some maintenance, such as mowing, pruning, or pest control, and should help support slope stabilization and enhance aesthetic appeal. High intensity landscaping requires the most maintenance and its only purpose is to enhance aesthetic appeal.

Table 1.

Most Desirable Native Plants for Highway Landscaping

Botanical Name	Common Name	Hardiness Zone	Maintenance Level	Growth Rate	Price Per Gallon*
<i>Ground Covers</i>					
Ilex vomitoria 'shillings'	Dwarf yaupon holly	North, Central, and South	Low	Slow	\$6.00
Heliaruhus debilis	Beach sunflower	South	Low	Fast	\$6.50
<i>Shrubs</i>					
Coccoloba uvifera	Sea grape	Central and South	Low	Fast	\$4.99
Eugenia spp.**	Stoppers	Central and South	Low	Moderate	\$6.32
Sabal minoa	Dwarf palmetto	North, Central, and South	Low	Slow	\$14.00
Tecoma stans	Yellow elder	Central and South	Low	Fast	\$6.25
<i>Vines</i>					
Campsis radicans	Trumpet creeper	North and Central	Low	Fast	\$15.00

Sources: Florida Department of Transportation, Florida Highway Landscape Guide, April 1995. Plant prices were collected online from Florida Nursery Mart, Wilcox Nursery and Landscape, Smarty Plants Nursery, Little Red Wagon Native Nursery, and Florida Native Plants Nursery and Landscaping.

*Large plants are often sold in multiple gallon sizes. The costs of larger plants were converted to per gallon to help price comparisons

**"spp." refers to multiple species. The price for Spanish stoppers is used.

TREATMENT OF EXISTING PLANTS

State policy requires that construction projects conserve the existing landscape to the greatest extent possible. Construction project plans include an evaluation of existing vegetation, considering whether it is best to protect, relocate, or remove vegetation. Typically, healthy plants that intersect with areas zoned for highway construction are tagged for relocation. Vegetation within a construction zone or surrounding a construction zone that is in poor health, diseased, or invasive are likely to be tagged for removal.²²

How Are Tax Dollars Spent on FDOT Landscaping?

Each FDOT district's landscape architect is responsible for approving landscape plans, following the guidelines in the FDOT Design Manual (2024). These plans emphasize:

- **50% Large Plant Requirement:** Shrubs, trees, and palms must comprise at least 50% of the total plant purchase value.
- **Diverse Plant Selection:** Prioritizing plants resistant to pests and diseases.
- **Clear Visibility:** Maintaining visibility of roadway signs and outdoor advertisements.
- **Preserving Infrastructure:** Ensuring that utilities and stormwater systems are not disturbed.

²² Florida Department of Transportation, Design Manual, 275 Tree and Palm Relocation, January 2024.

LOOKING AHEAD: WHAT POLICY CHANGES SHOULD BE CONSIDERED?

The economy has changed in the years since the landscape spending requirement was imposed. Since 2020, the National Highway Construction Cost Index witnessed considerable growth, suggesting the cost to develop highway infrastructure is inflated. One interpretation suggests the inflated construction costs are due to the impact of broader events, such as supply chain disruptions, material shortages, and oil price changes.²³

As the National Highway Construction Cost Index continues to experience growth, the inflated dollars allocated to FDOT hold less purchasing power and policymakers will need to consider how best to use dollars to develop transportation infrastructure while still maintaining the benefits of highway landscaping. The policies of other states can offer insight.

Like Florida, Texas provides a minimum spending requirement based on highway construction contracts. Unlike Florida, however, Texas establishes a maximum spending limit. Texas requires that an amount not less than one-half of one percent—and not to exceed one percent—of the amount spent under contract for the construction, maintenance, or improvement of the highway be allocated to districts for landscaping improvement. Texas also promotes a cost-share program, called the Green Ribbon Project, to encourage the pursuit of landscaping projects under public-private partnerships.²⁴

Florida legislators have already considered changing the landscape spending requirement. During the 2024 legislative session, the state legislature considered Senate Bill 1226, which included a provision to amend the landscape spending requirement to a tiered approach (Table 2). Based on current spending patterns, most projects would still be subjected to a 1.5 percent programmed spending requirement. Eighteen projects, comprising about three percent of total projects, would be required to spend a smaller portion of the contracted amount on landscape spending.

Table 2.
SB 1226 Proposed a Tiered Approach to Landscape Project Spending

Projects with Contracted Amounts of:	Allocated Percentage	Number of Projects Statewide FY 2024-2025
\$50,000,000 or less	1.5 percent	652
\$50,000,001 to \$100,000,000	1.0 percent	8
\$100,000,001 to \$250,000,000	0.75 percent	6
\$250,000,001 to \$500,000,000	0.50 percent	4
\$500,000,001 or more	0.25 percent	0

Source: The Florida Senate, Bill Analysis and Fiscal Impact Statement CS/SB 1226, February 2024.

State policymakers should also review the MRP system to ensure the state’s investment in plant materials is properly protected. A 2008 study from the University of Central Florida suggests the FDOT MRP could benefit from updates. The study recommends implementing new technologies, such as high speed cameras and image analysis, to aid data collection and analysis. The study also recommends re-evaluating aspects of the grading criteria, such as assigned weights, including new road elements, and modifying pass/fail methodology for certain features to a scale.²⁵

²³ Federal Highway Association, National Highway Construction Cost Index 2023 Q3, March 2024.

²⁴ Texas Legislature, General Appropriations Act for the 2024-25 Biennium.

²⁵ Center for Advanced Transportation Systems Simulation at the University of Central Florida, Florida Maintenance Rating Program (MRP) Assessment and Enhancement, May 2008.

CONCLUSIONS AND RECOMMENDATIONS

Investing in transportation is crucial to limiting traffic congestion and keeping roads safe, thus maintaining the ability to safely and efficiently move people and goods throughout Florida. Well-planned and sustainable highway landscaping provides important safety, environmental, and economic benefits. Because vegetation is vulnerable to age, disease, and severe weather, highway landscaping projects should have a consistent level of funding to ensure vegetation can be replaced when needed.

Florida TaxWatch understands and appreciates the need to establish a consistent and adequate level of funding to implement and maintain landscapes on Florida's roadways. What is missing is an upper limit to what can be spent on roadway landscaping. Florida TaxWatch recommends the legislature amend §334.044(26) Fla. Stat. (2023) to: (1) include the tiered pricing system that was included in SB 1226 (2024) or one that is substantially similar; or (2) establish (like Texas) an upper limit to how much can be spent on roadway landscaping.

Additionally, the state should fund a comprehensive review of the MRP system, ensuring the state's investment on plant materials is properly protected, and establish a funding mechanism based on an updated MRP system to create a transparent and accountable way to track FDOT funds allocated to highway landscape maintenance.

ABOUT FLORIDA TAXWATCH

As an independent, nonpartisan, nonprofit taxpayer research institute and government watchdog, it is the mission of Florida TaxWatch to provide the taxpayers of Florida and public officials with high quality, independent research and analysis of issues related to state and local government taxation, expenditures, policies, and programs. Florida TaxWatch works to improve the productivity and accountability of Florida government. Its research recommends productivity enhancements and explains the statewide impact of fiscal and economic policies and practices on citizens and businesses.

Florida TaxWatch is supported by voluntary, tax-deductible donations and private grants. Donations provide a solid, lasting foundation that has enabled Florida TaxWatch to bring about a more effective, responsive government that is accountable to the citizens it serves since 1979.

FLORIDA TAXWATCH RESEARCH LEADERSHIP

Dominic M. Calabro	President & CEO
The Hon. Jeff Kottkamp	Executive VP & General Counsel
Bob Nave	Senior Vice President of Research
Kurt Wenner	Senior Vice President of Research
Steve Evans	Senior Advisor

FLORIDA TAXWATCH VOLUNTEER LEADERSHIP

Piyush Patel	Chairman
James Repp	Chairman-Elect
Marva Brown Johnson	Treasurer
David Casey	Secretary
US Senator George LeMieux	Immediate Past Chairman

RESEARCH PROJECT TEAM

Meg Cannan	Senior Research Analyst <i>Lead Author</i>
George Kantelis	Communications Specialist <i>Layout & Design</i>

All Florida TaxWatch research is done under the direction of Dominic M. Calabro, President, CEO, Publisher & Editor.

The findings in this Report are based on the data and sources referenced. Florida TaxWatch research is conducted with every reasonable attempt to verify the accuracy and reliability of the data, and the calculations and assumptions made herein. Please contact us if you believe that this paper contains any factual inaccuracies.

The research findings and recommendations of Florida TaxWatch do not necessarily reflect the view of its members, staff, Executive Committee, or Board of Trustees; and are not influenced by the individuals or organizations who may have sponsored the research.

This Page Left Blank for Printing Purposes

The **Eyes** and **Ears** of Florida Taxpayers.

See more at FloridaTaxWatch.org/Research

Florida  TaxWatch

Stay Informed

 FloridaTaxWatch.org

 Florida TaxWatch

 @FloridaTaxWatch

 @FloridaTaxWatch

 @FloridaTaxWatch

 FloridaTaxWatch

106 N. Bronough St
Tallahassee, FL 32301

o: 850.222.5052

Copyright © 2024
Florida TaxWatch
Research Institute, Inc.
All Rights Reserved

Have a Research Inquiry?

Contact Jeff Kottkamp at jkottkamp@floridataxwatch.org