

A JOINT PROJECT OF ...



## A SPECIAL REPORT

WHAT IS YOUR VISION  
FOR FLORIDA'S FUTURE?





# From the President

Dear Friends:

Our state is at a crossroad. *Florida 2070* and *Water 2070*—joint projects of the Florida Department of Agriculture and Consumer Services, University of Florida Geoplan Center and 1000 Friends of Florida—are intended to foster an informed discussion on how public policy and personal choices we make today will reverberate for generations to come.

As *Florida 2070* clearly shows, if we continue developing land the way we do now more than a third of the state will be paved over by 2070. Millions of acres of agricultural and natural lands—essential to maintaining our quality of life, jobs, water supply and more—will be lost.

Building on *Florida 2070*, *Water 2070* reveals that the almost 15 million new Floridians in our state by 2070 will add a heavy burden to Florida's fragile water supply, with water use projected to more than double. With many areas of Florida already facing water shortages today, this clearly is unsustainable.

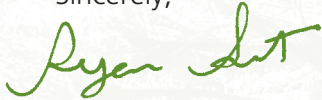
Both studies include Alternative 2070 scenarios featuring more compact development patterns, increased conservation lands, and in the case of *Water 2070*, modest water conservation. More compact development patterns help save a significant amount of natural and agricultural lands from development by 2070. But a modest 20% reduction in water demand clearly does not go far enough.

What can we do? In a nutshell, support public policies that promote more compact development, protect natural lands from development and conserve water. In addition, each of us should work to reduce personal water use, in particular that used for outdoor irrigation.

This report provides a brief overview of *Florida 2070* and *Water 2070*, including recommendations to promote a more sustainable future. We hope you will visit **[www.1000friendsofflorida.org](http://www.1000friendsofflorida.org)** and search for "Florida 2070" to review more detailed information, including informative slide shows, detailed state and regional maps, technical reports and more on both *Florida 2070* and *Water 2070*.

We hold Florida's future in our hands. Please be concerned, be informed, and be part of the solution so we can pass on a better Florida to our children and grandchildren.

Sincerely,



Ryan Smart, *President*



Ryan Smart

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***What can we do? In a nutshell, support public policies that promote more compact development, protect natural lands, and conserve water by reducing personal water use, in particular that used for outdoor irrigation.***

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P.S. We hope you will use the enclosed envelope to make a donation to 1000 Friends of Florida so that we may continue to spearhead more projects to identify workable strategies to build better communities and save special places throughout Florida.

This is a joint project of the Florida Department of Agriculture and Consumer Services (DACS), University of Florida Geoplan Center and 1000 Friends of Florida with funding provided by DACS and The Curtis and Edith Munson Foundation.

For more detailed information on *Florida 2070* and *Water 2070*, including online presentations, state and regional maps and reports, please visit **[www.1000friendsofflorida.org/Florida2070](http://www.1000friendsofflorida.org/Florida2070)**.

Cover Photo Courtesy of David Moynahan Photography



# Florida 2070 / Water 2070

Known for its sandy beaches, crystalline springs, piney flatwoods, the Everglades, and much more, Florida is home to some of the nation's most iconic landscapes. These natural lands and waters provide the foundation for Florida's multi-billion dollar tourism and agriculture industries, two mainstays of the economy. Sheltering and sustaining a vast array of wildlife, Florida's natural areas also protect and cleanse the drinking water that so many of us take for granted.

As Florida grows to approximately 33.7 million residents by 2070—almost 15 million more people than in 2010—one of the biggest challenges is to ensure sufficient land and water to meet the needs of people, agriculture and the environment. Florida's rapidly growing population makes the historic competition between these users even more intense.

Recognizing the need to focus on these critical issues, in 2015–2016, the Florida Department of Agriculture and

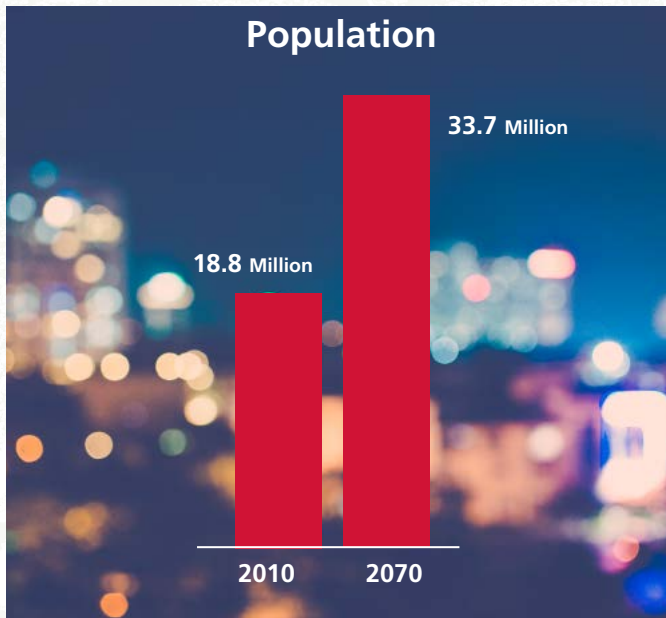
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*As Florida grows to approximately 33.7 million residents by 2070—almost 15 million more people than in 2010—one of the biggest challenges is to ensure sufficient land and water to meet the needs of people, agriculture and the environment.*

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Consumer Services (DACS), the University of Florida's Geoplan Center, and 1000 Friends of Florida partnered on *Florida 2070* and *Water 2070*. Using geographic information systems (GIS), these projects compare actual 2010 land use patterns with two 2070 scenarios to accommodate and provide water for these new residents. The resulting map series shows the impacts of population increase and associated development on land use and water demand:

- **Baseline 2010** – Shows 2010 actual distribution of development and conservation lands, and water demand associated with development and agriculture
- **Trend 2070** – Depicts 2070 distribution of development, conservation lands as of 2016, and water demand if current land development and water consumption patterns continue, and no additional land is protected from development.
- **Alternative 2070** – Illustrates 2070 distribution of development using more compact development patterns and increased land conservation, and shows the associated water demand assuming a modest 20% increase in water conservation. Alternative 2070 assumes all lands on the current Florida Forever and Greenways Priorities 1 and 2 lists are protected from development.



Florida Department of Agriculture and Consumer Services



CityPlace, West Palm Beach



Florida Department of Agriculture and Consumer Services



# Statewide Findings

## Florida 2070

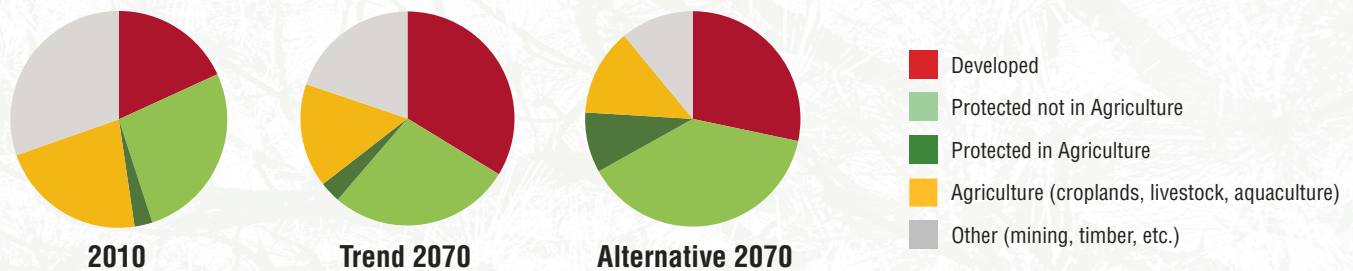
The results are clear. If we keep developing the way we do now, by 2070 more than a third of Florida's lands will be developed. On the other hand, if we promote more compact development patterns and increase protected natural lands, we will save 1.8 million acres of land from development and conserve an additional 5.8 million acres of natural and agricultural land.

Protecting natural lands identified on current Florida Forever and Greenways Priorities 1 and 2 lists will result in the permanent protection of close to half of the state's land. By protecting these lands and promoting

more compact development, close to a quarter of the state's lands will remain in agricultural production. With either 2070 development scenario, lands used for timber and mining will be most significantly impacted.

***If we keep developing the way we do now, by 2070 more than a third of Florida's lands will be developed and development-related water demand will more than double.***

## Florida 2070 Comparison of Statewide Developed, Protected, Agriculture and Other Lands

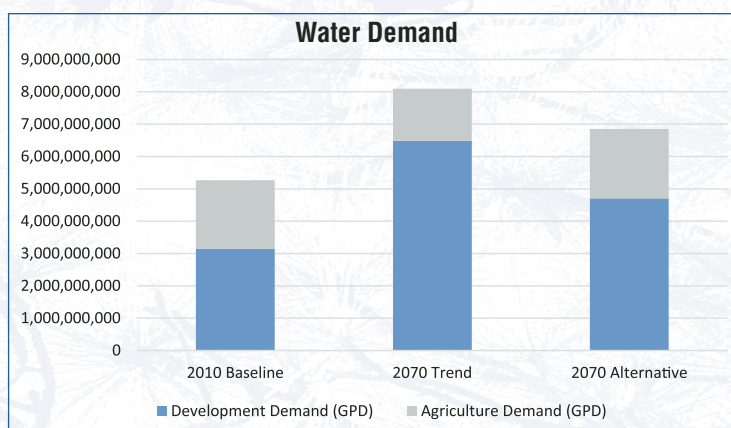


## Water 2070

Development-related water demand will be the major driver of increased future water consumption in Florida. If we don't change the way we develop land and consume water, this demand will more than double by 2070. The combination of more compact development patterns and a modest 20% increase in water conservation has the potential to reduce water demand

by more than a quarter in 2070. Already there are existing water supply shortfalls in some areas of the state. Promoting more compact development and significantly increasing water conservation efforts is essential if Florida is to accommodate 15 million more residents, maintain agricultural productivity, and protect natural systems in 2070.

## Water 2070 Comparison of Statewide Water Demand Related to Development and Agriculture



David Moynahan Photography



# Regional Findings

In many respects, **CENTRAL FLORIDA** faces the “perfect storm.” With the most sprawling current development patterns in the state and explosive projected growth, in both 2070 scenarios close to half of this region’s lands would be developed and there would be a significant decrease in agricultural lands. Central Florida has a relatively modest amount of natural lands slated for future protection, allowing future development to continue to sprawl.

When compared with 2010, overall water demand in Central Florida increases by 55% in the Trend and 33% in the Alternative scenario. Not surprisingly, development-related water demand increases by 112% in the Trend and by 62% in the Alternative scenario over the same period. Because of the loss of agricultural lands, agriculture water demand declines by 31% with the Trend, and by 12% with the Alternative scenario.

Roughly a third more of **NORTHEAST FLORIDA** lands develop under either 2070 scenario. This is due mostly to current sprawling development patterns coupled with almost a two-fold increase in population in the region. However, conservation lands would double under the Alternative scenario. Compared to 2010, overall water demand increases by 88% in the Trend and 48% in the Alternative. In the Alternative scenario agricultural water demand increases by 25% because irrigated agricultural lands do not develop. Development-related water demand increases by 120% in the Trend and by 57% in the Alternative.

While the **SOUTH FLORIDA** region is projected to almost double in population in 2070, its current relatively compact development patterns combined with a healthy projected increase in protected natural

and agricultural lands keeps the future development footprint fairly compact. Currently, about half of the region’s lands are protected, and under the Alternative scenario protected agricultural lands will increase significantly. Compared with 2010, the region will experience a 40% increase in overall water demand in Trend 2070, but only a 22% increase in Alternative 2070. Development-related water demand more than doubles between 2010 and the Trend 2070, but increases by only 39% when comparing the baseline with the Alternative.

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***Central Florida faces the “perfect storm.”  
With the most sprawling current development  
patterns in the state and explosive projected  
growth, close to half of this region’s lands  
would be developed and agricultural lands  
decrease in both 2070 scenarios.***

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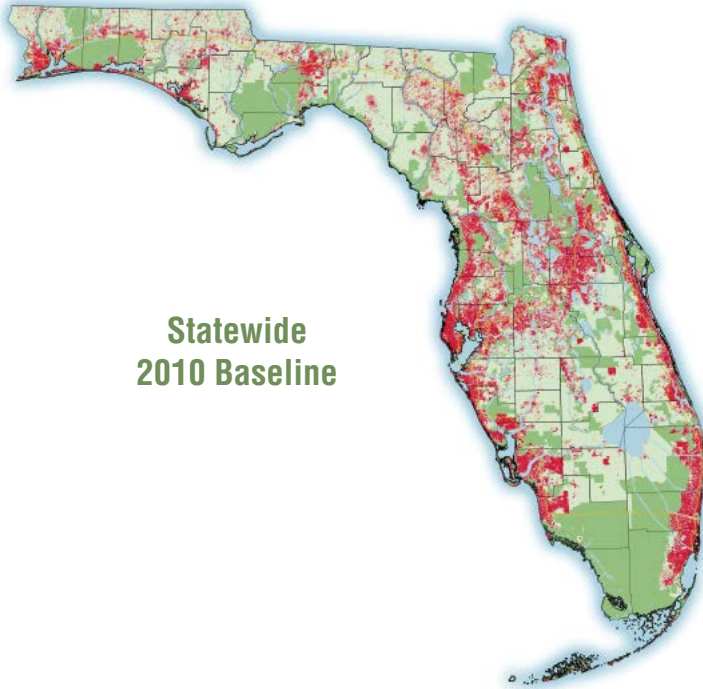
Understandably, the **PANHANDLE** region is least impacted due to the region’s relatively small projected population increase and, in the Alternative, a significant increase in protected lands. In terms of overall water demand, when compared with 2010 the Trend reflects a 61% increase while the Alternative reflects a 28% increase. Over the same period, agricultural lands are projected to increase, resulting in a 31% increase in agriculture water demand in the Trend and a 33% increase in the Alternative. Development-related water demand increases by 67% in the Trend and 27% in the Alternative, when compared with 2010.

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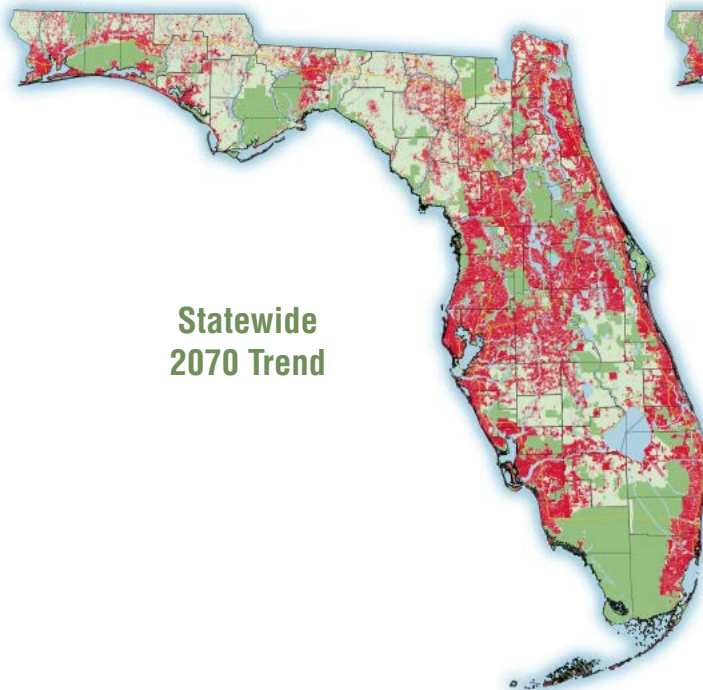
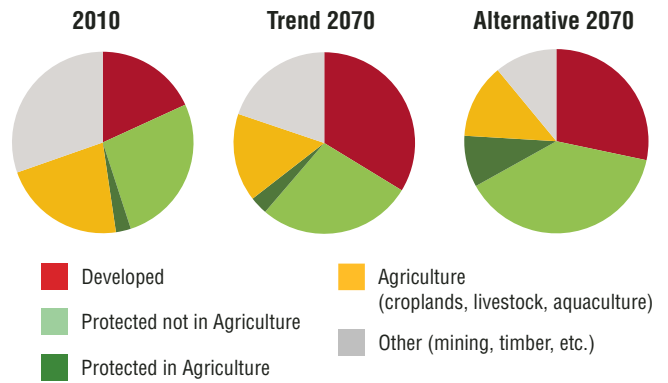
***The maps and charts on the following pages are intended to stimulate an informed conversation on what we should start doing today to create a more livable, sustainable and economically healthy future for Florida.***

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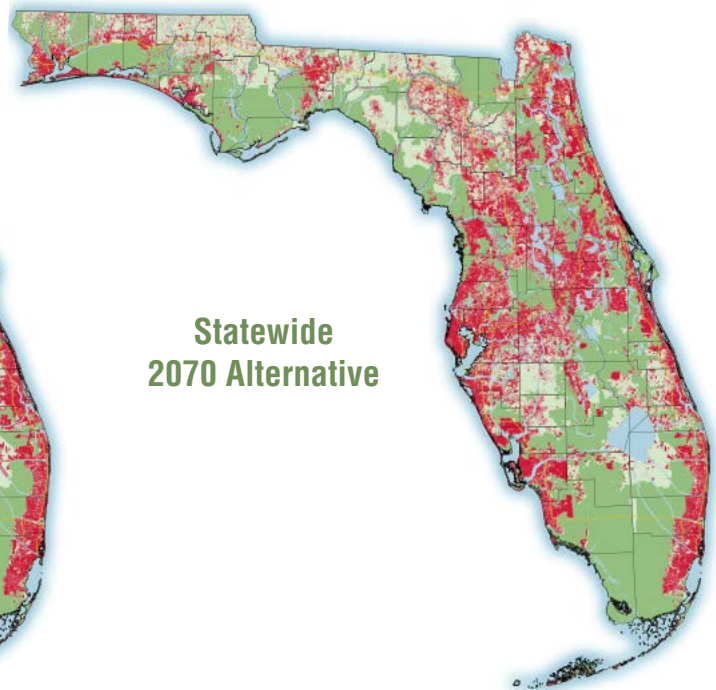




**Statewide  
2010 Baseline**



**Statewide  
2070 Trend**



**Statewide  
2070 Alternative**

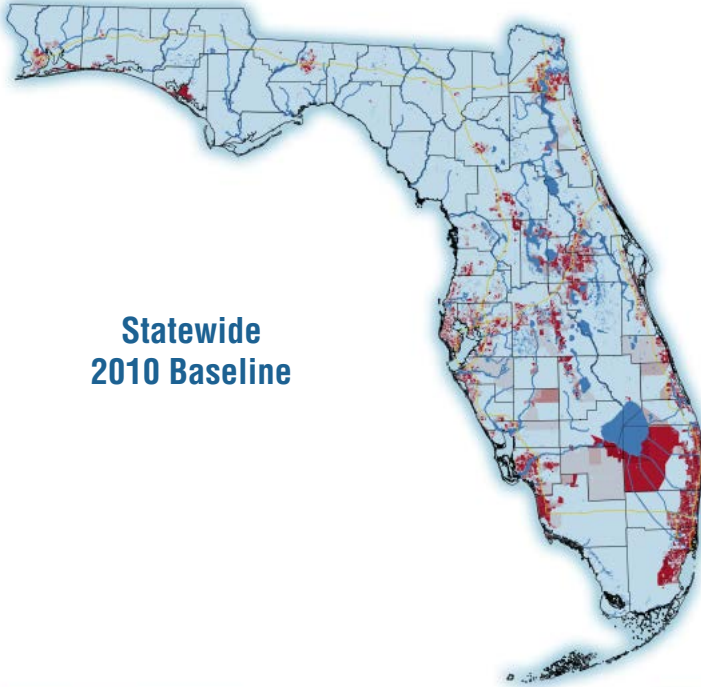
■ Developed ■ Protected ■ Other



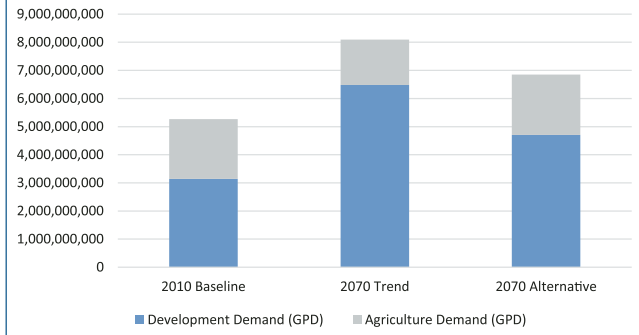
# WATER 2070 State Water Scenarios

*(Total demand by census block in gallons per day per acre)*

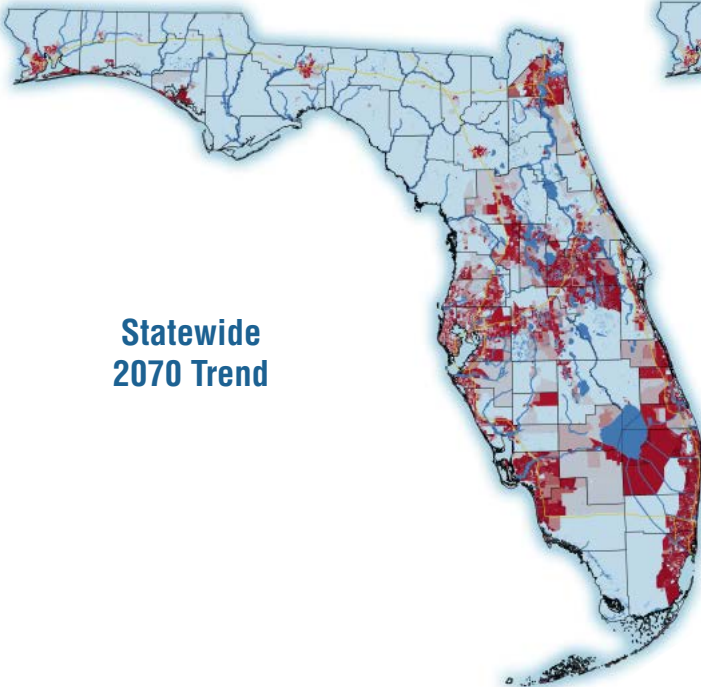
**Statewide  
2010 Baseline**



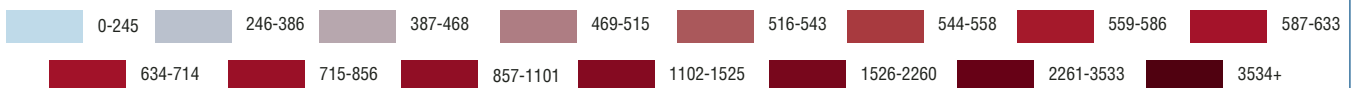
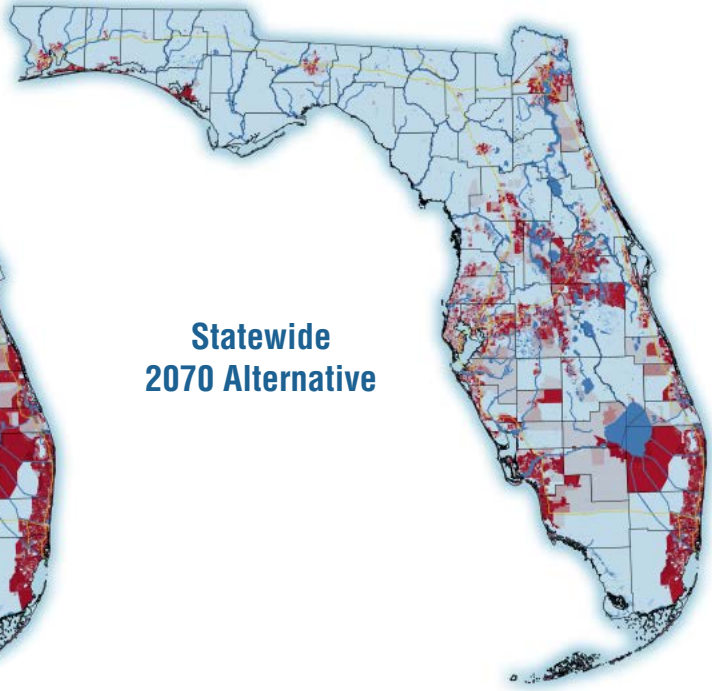
**Statewide Water Demand**



**Statewide  
2070 Trend**

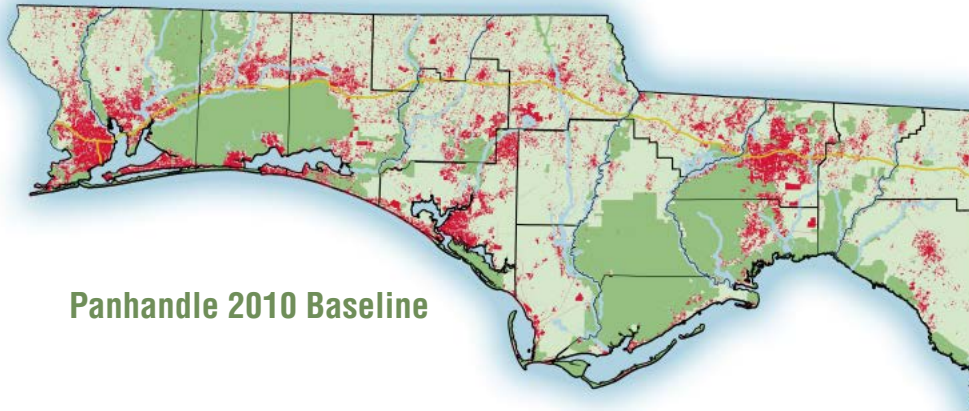


**Statewide  
2070 Alternative**

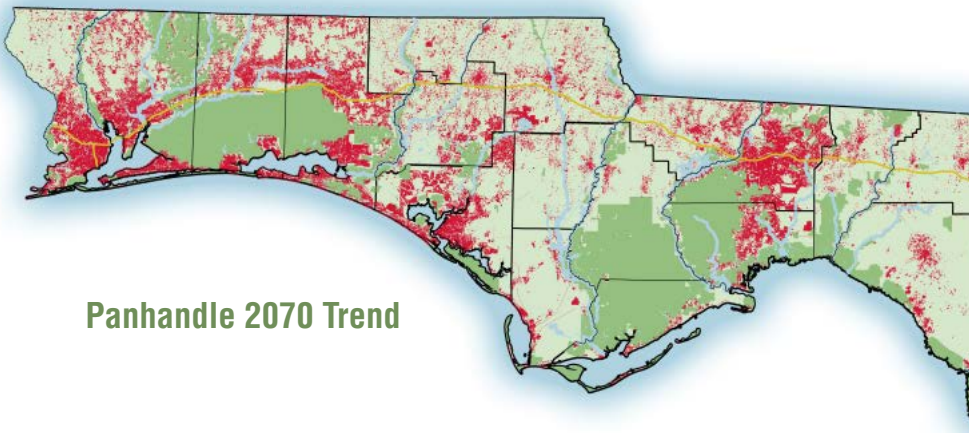


This map uses a mathematically-generated geometric scale to better visualize the results due to the wide range in values. Each category has roughly the same number of data entries.

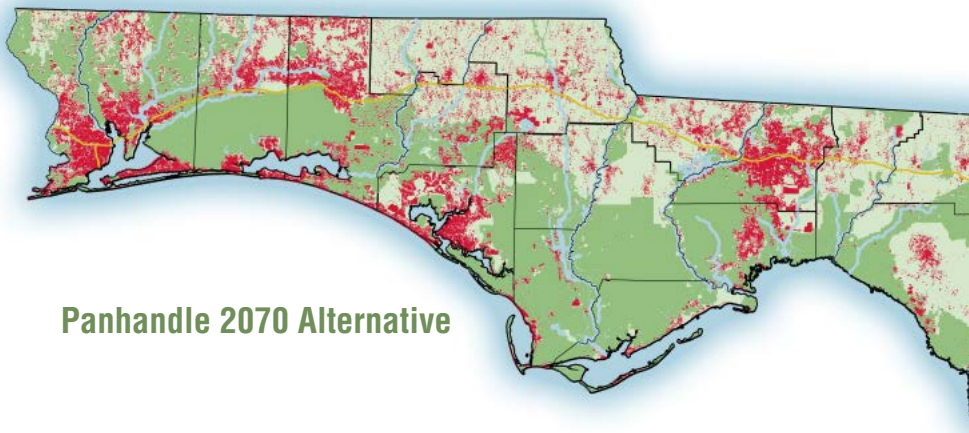




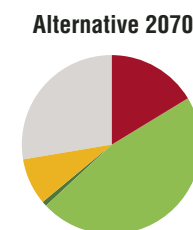
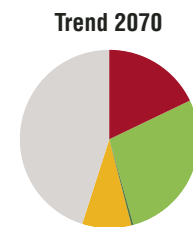
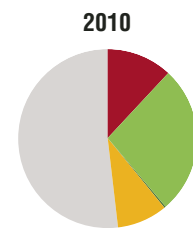
Panhandle 2010 Baseline



Panhandle 2070 Trend

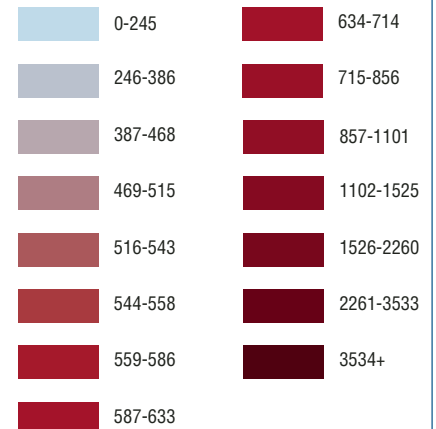
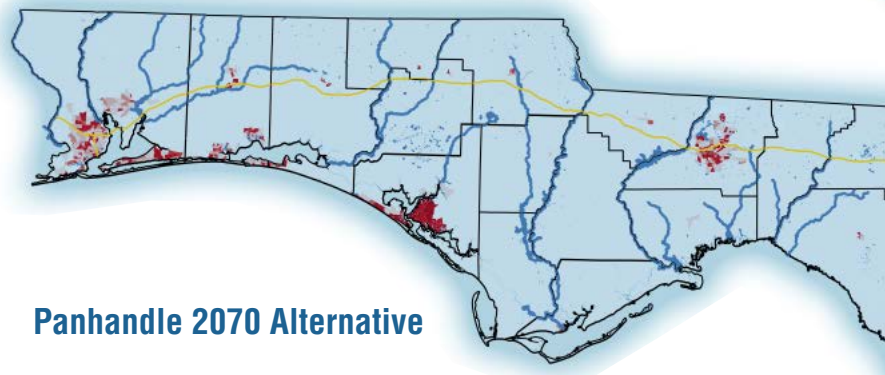
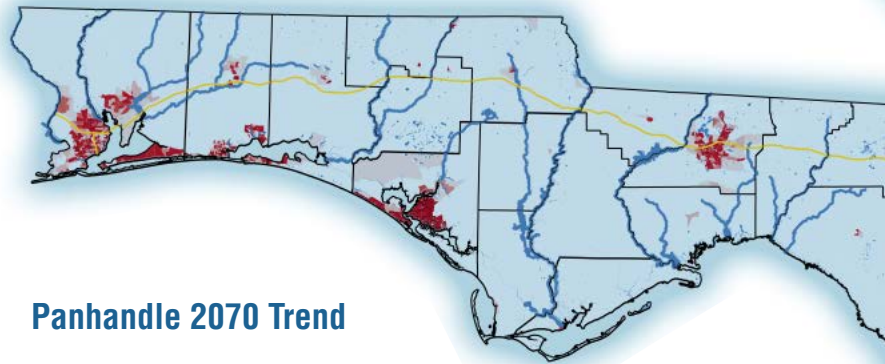


Panhandle 2070 Alternative

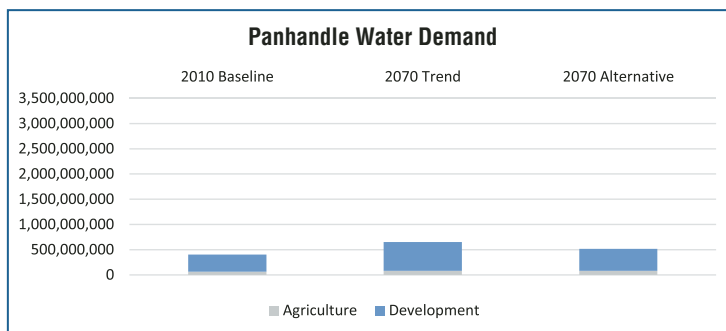




(Total demand by census block in gallons per day per acre)



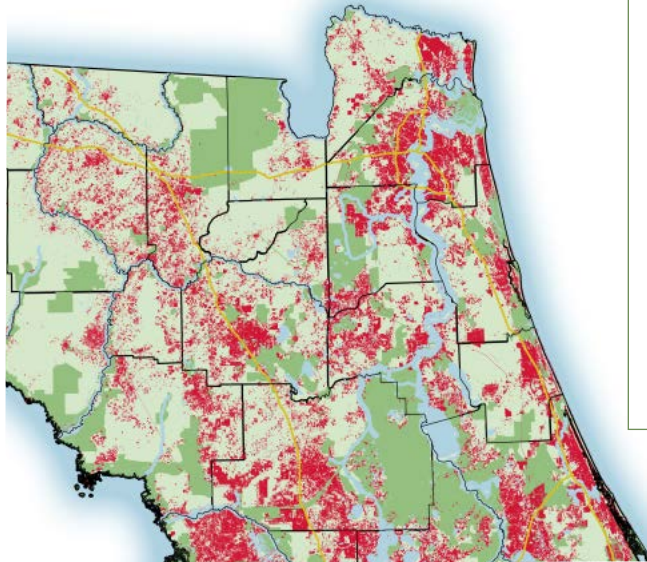
This map uses a mathematically-generated geometric scale to better visualize the results due to the wide range in values. Each category has roughly the same number of data entries.



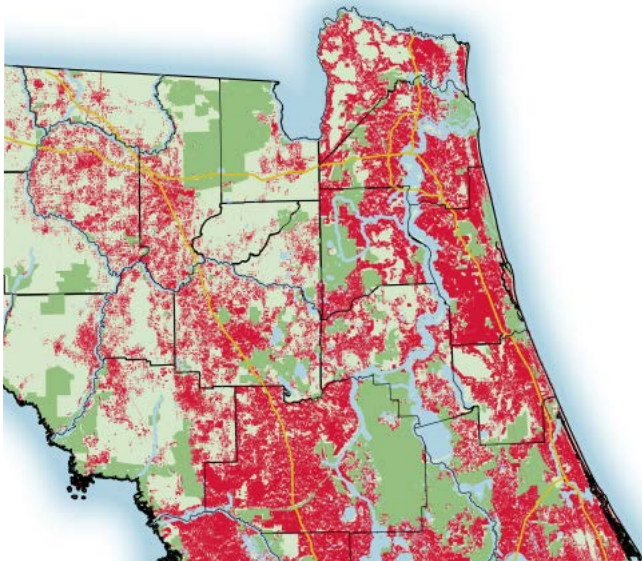
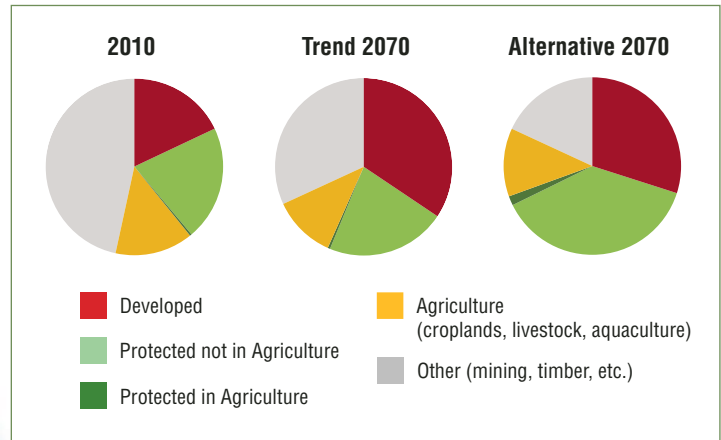
David Moynahan Photography



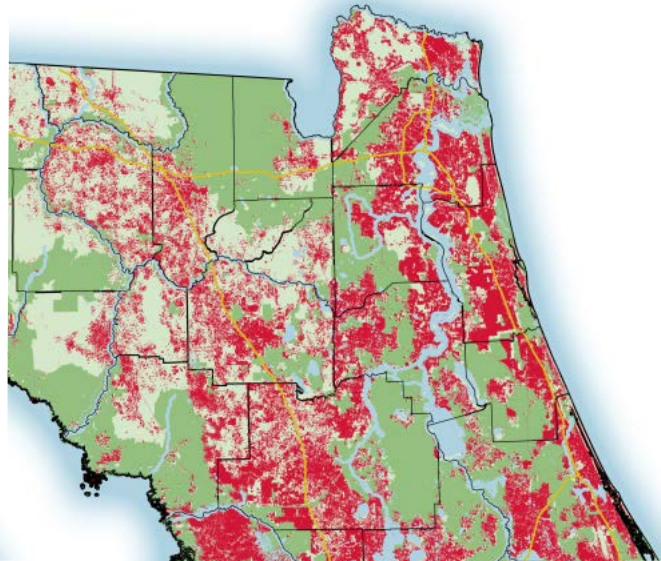
# Northeast Florida Development Scenarios



Northeast 2010 Baseline



Northeast 2070 Trend

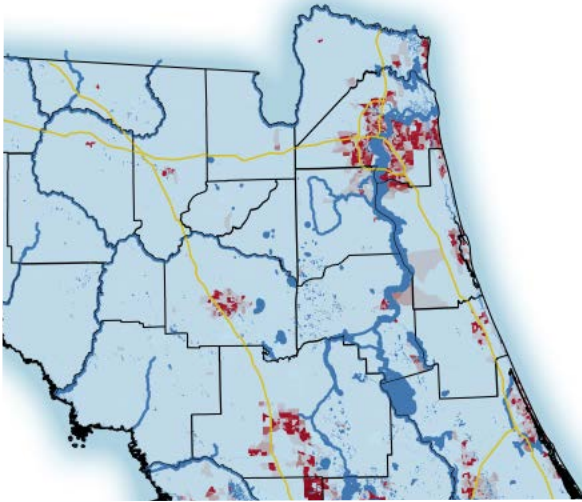


Northeast 2070 Alternative

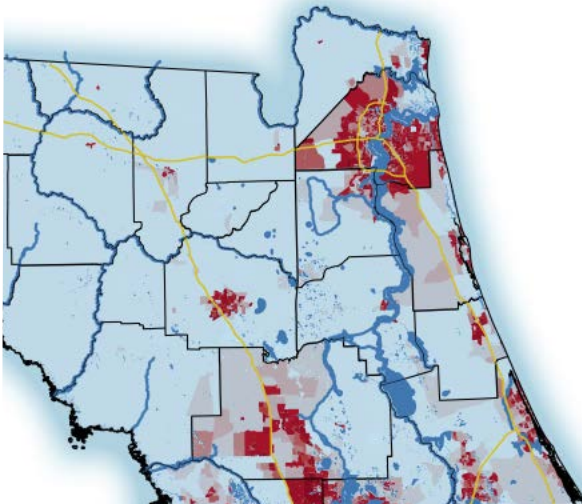
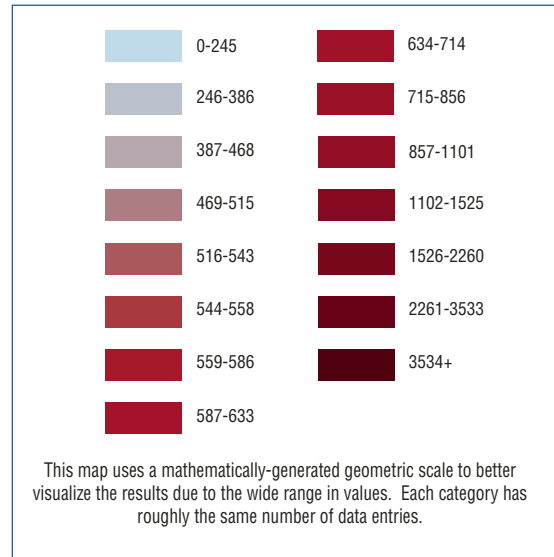
■ Developed
 ■ Protected
 ■ Other



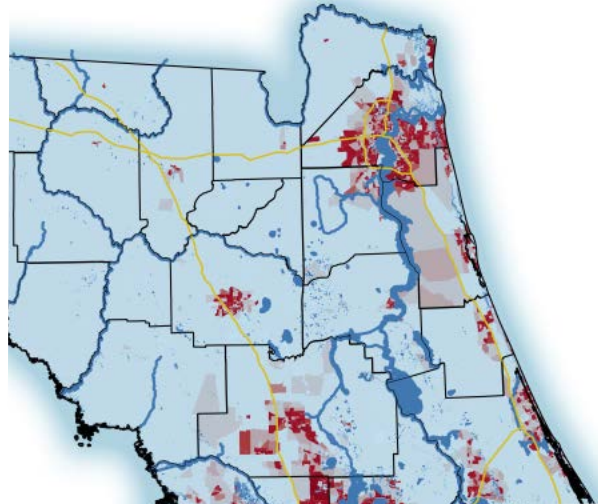
*(Total demand by census block in gallons per day per acre)*



**Northeast 2010 Baseline**



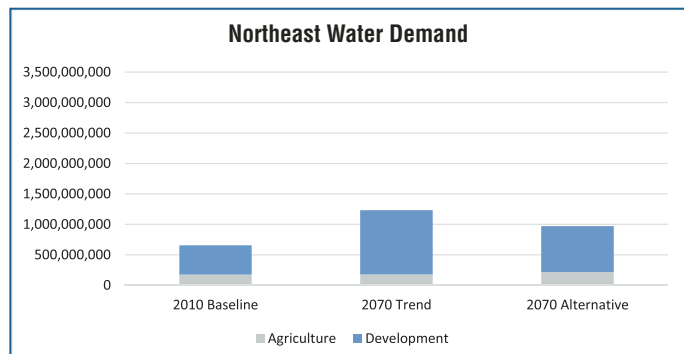
**Northeast 2070 Trend**



**Northeast 2070 Alternative**

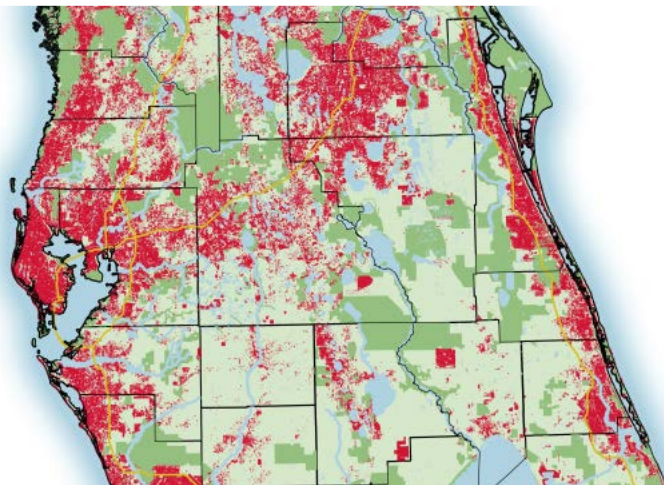


Ryan Ketterman for Visit Jacksonville

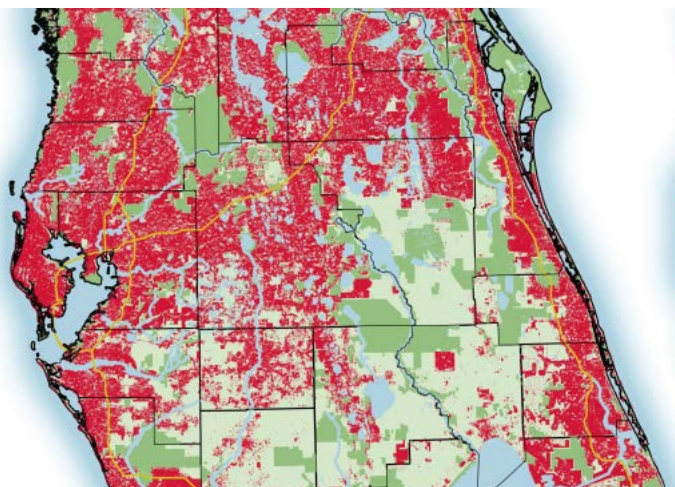
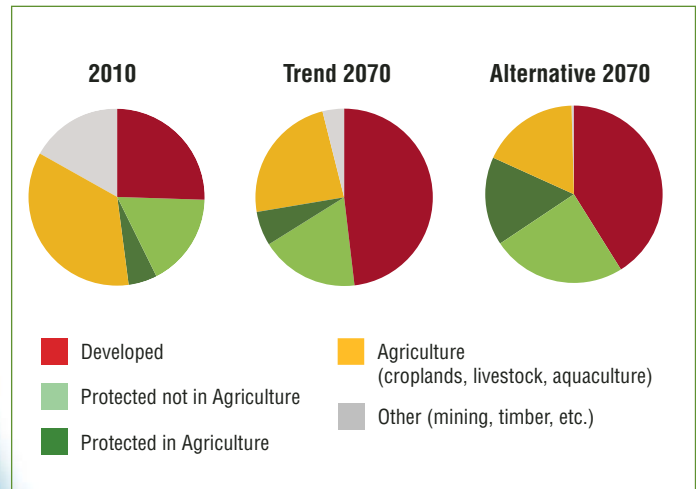




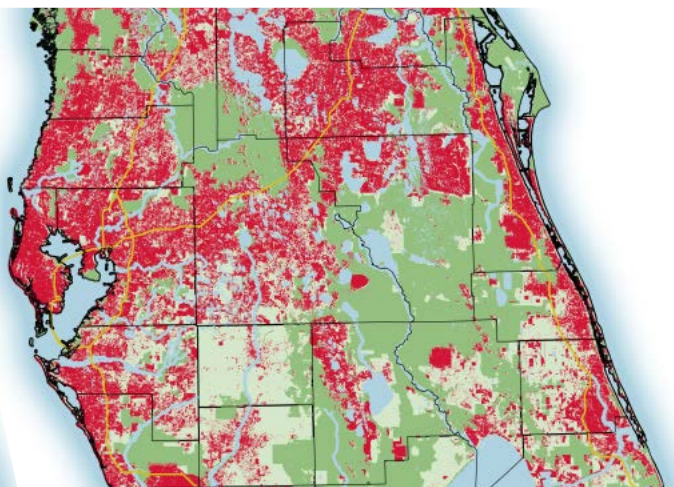
# Central Florida Development Scenarios



**Central 2010 Baseline**



**Central 2070 Trend**

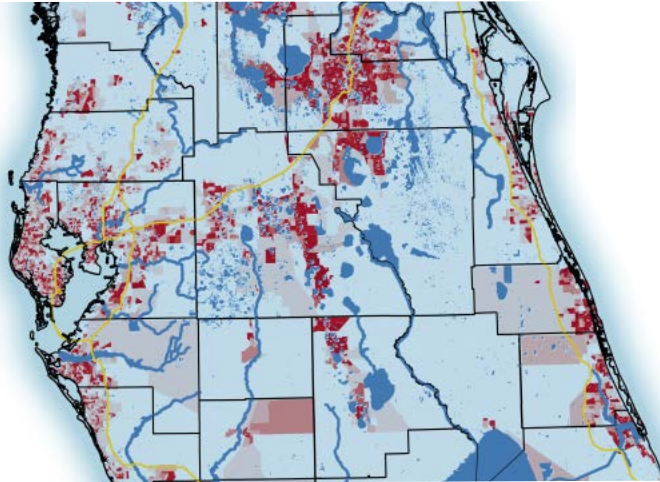


**Central 2070 Alternative**

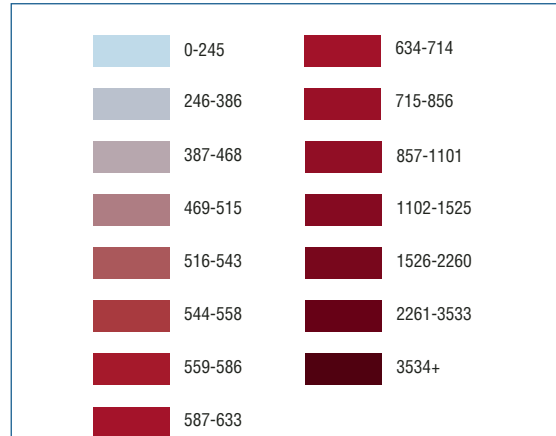
■ Developed
 ■ Protected
 ■ Other



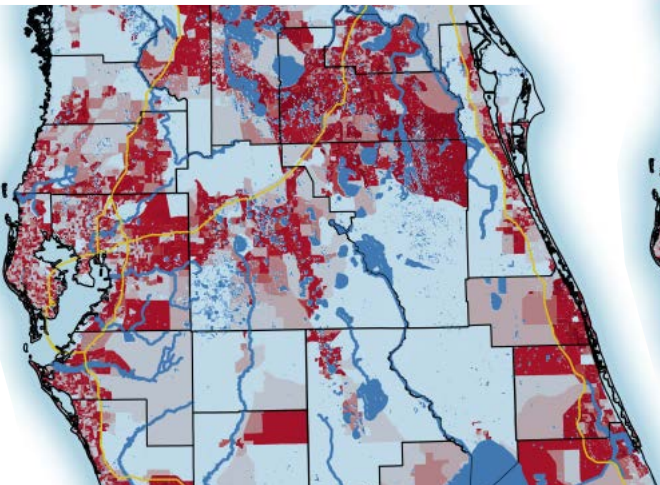
*(Total demand by census block in gallons per day per acre)*



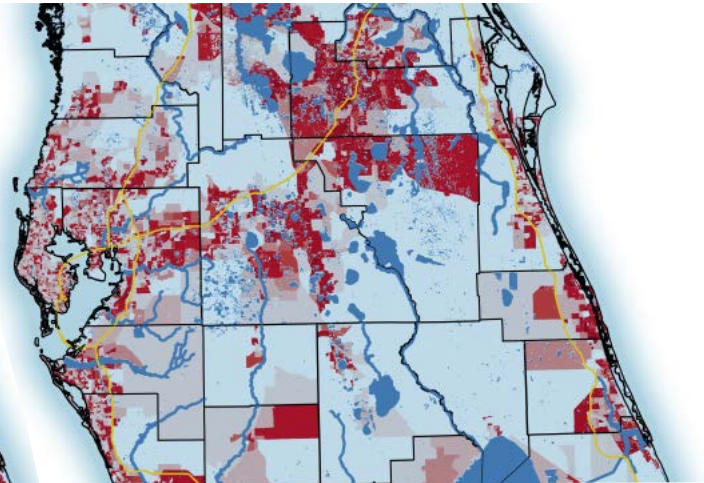
**Central 2010 Baseline**



This map uses a mathematically-generated geometric scale to better visualize the results due to the wide range in values. Each category has roughly the same number of data entries.



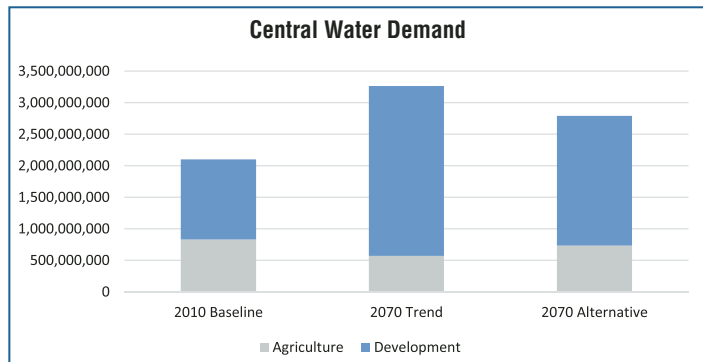
**Central 2070 Trend**



**Central 2070 Alternative**



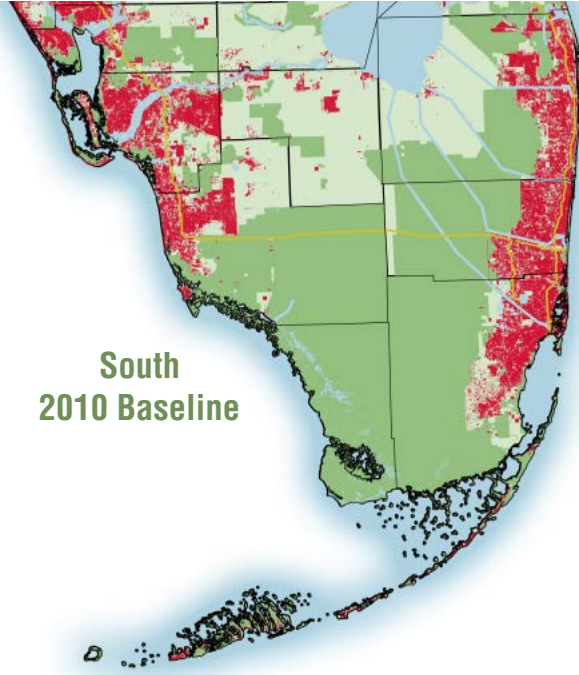
Florida Bicycle Association



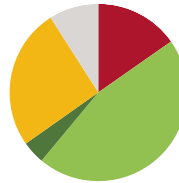


# South Florida Development Scenarios

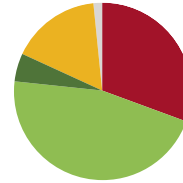
South  
2010 Baseline



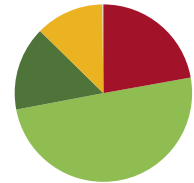
2010



Trend 2070



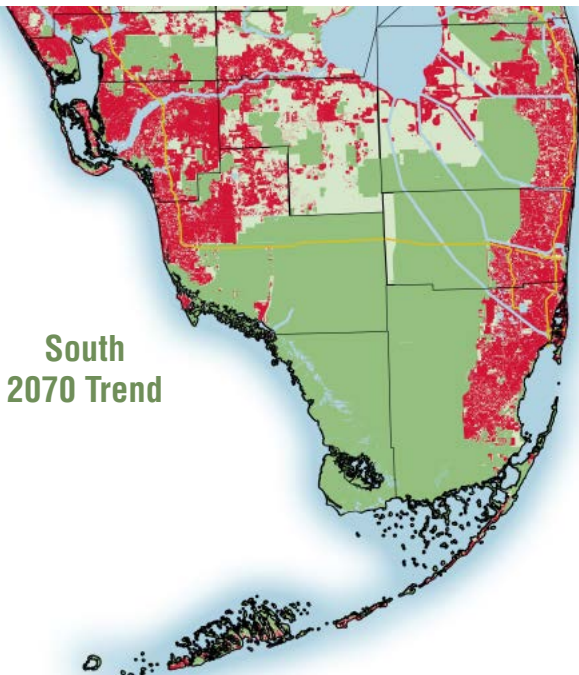
Alternative 2070



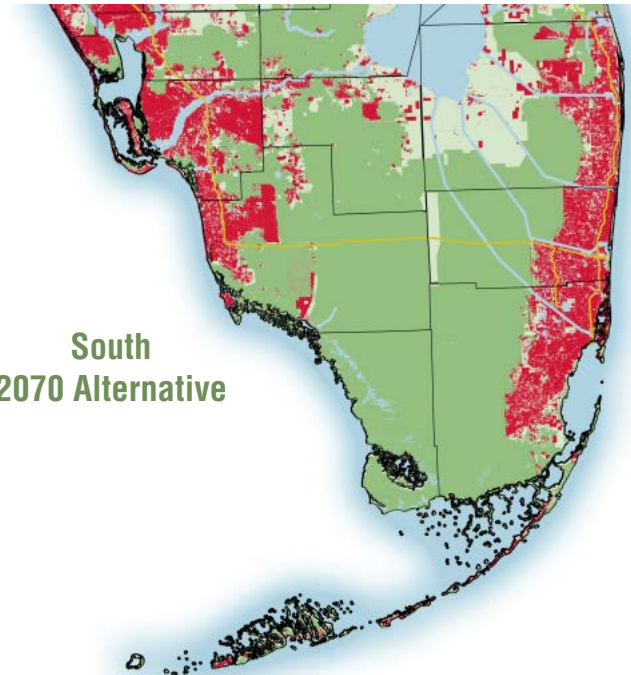
■ Developed  
■ Protected not in Agriculture  
■ Protected in Agriculture

■ Agriculture (croplands, livestock, aquaculture)  
■ Other (mining, timber, etc.)

South  
2070 Trend



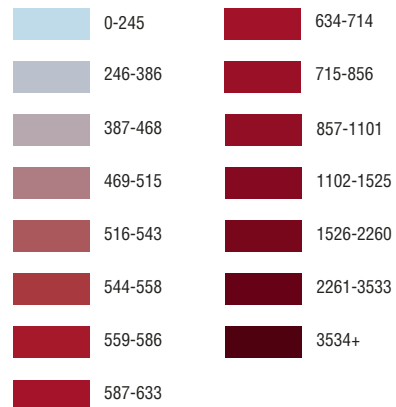
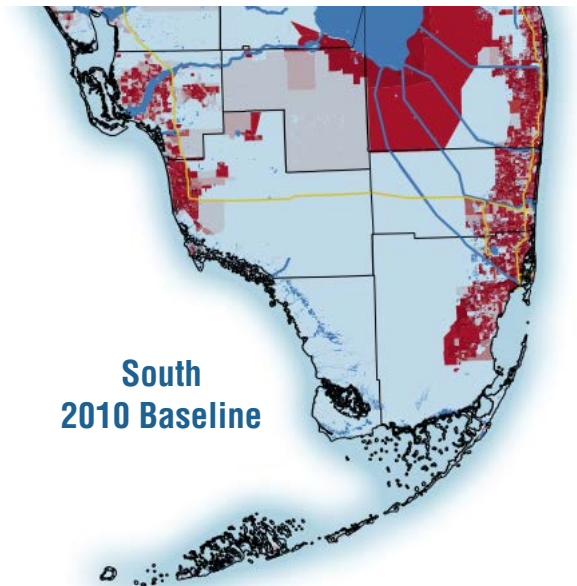
South  
2070 Alternative



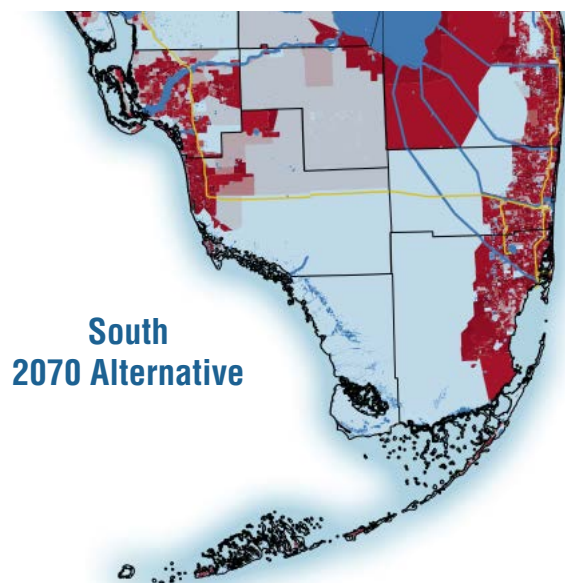
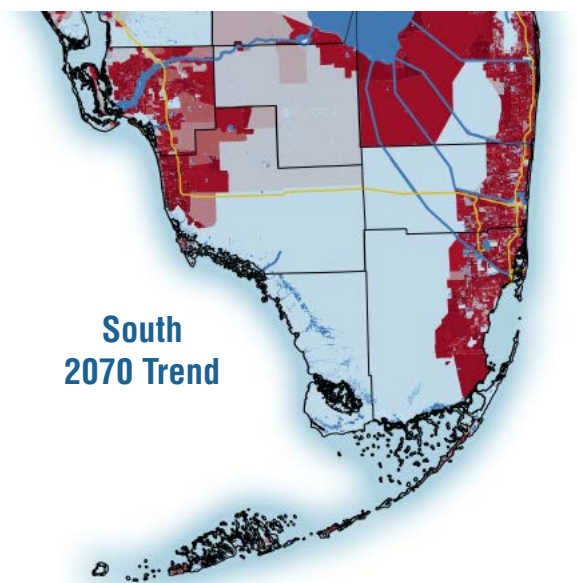
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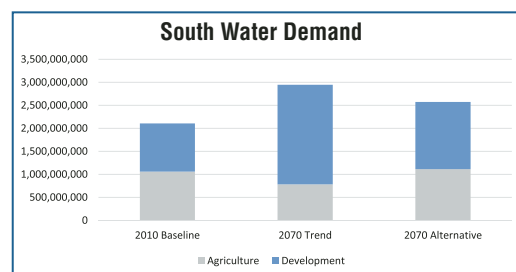
(Total demand by census block in gallons per day per acre)



This map uses a mathematically-generated geometric scale to better visualize the results due to the wide range in values. Each category has roughly the same number of data entries.



Florida Department of Agriculture and Consumer Services







# Recommendations

The most important finding from Florida 2070 is that even modest increases in development densities can result in a substantial saving of land. These lands would remain as natural lands or in agricultural production and could be protected to ensure a more sustainable Florida for future generations.

There are clear fiscal advantages to more compact development patterns, including lower costs to the public for roads, drinking water, stormwater management and sewage treatment. It can result in greater diversity of transportation options and can save individuals time and money otherwise spent commuting or waiting in traffic. Higher gross development densities do not mean that choice in housing type will be lost...in fact in some places it will increase housing choices.

Local governments should consider the long view, even when making decisions on small tracts. The cumulative effect of multiple small land use changes will, over time, shape the future landscape of Florida for better or worse.

Here are some strategies that can help protect Florida's agricultural, working and natural lands:

## Save Special Places

- Protect vital conservation, agricultural and other working lands like those on Florida Forever and Florida Greenways lists
- Support funding for greenways and corridors that protect wildlife habitat and provide recreational opportunities
- Establish incentives and increase funding to help landowners conserve important agricultural lands and other working landscapes
- Work to significantly lessen the impact of new development on Florida's lands and waters

## Build Better Communities

- Support infill and redevelopment in a manner that is sensitive to existing communities
- When new areas are developed, give priority to those areas near existing communities and infrastructure
- Promote a mixture of homes, shops, schools and offices within close proximity
- Include a range of housing choices to ensure affordability
- Design communities for multiple transportation options, including walking, biking and public transportation
- Protect significant historic and natural resources within communities





# Recommendations

*Water 2070* reveals that if Florida continues with current development patterns and water use, development-related water demand will more than double by 2070. While more compact development patterns and modest water conservation will reduce 2070 water demand by 27%, existing water shortages in many areas of the state reinforce that we must do even better.

The single most effective strategy to reduce water demand in Florida is for individuals to significantly reduce the amount of water used for landscape irrigation. Not only does this conserve water, but it also will result in savings to homeowners through reduced water bills. Additionally, if enough people conserve water, community infrastructure costs associated with supplying water and addressing sewage and stormwater can be significantly reduced, resulting in tax savings. Increasing public and personal conservation efforts is essential.

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***The single most effective strategy to reduce water demand in Florida is for individuals to significantly reduce the amount of water used for landscape irrigation.***

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## Expand Public Water Conservation Efforts

- Increase funding and outreach for the Florida Water Star and Florida-Friendly Landscaping™ programs to promote greater water conservation in new and existing development
- Require Florida Friendly Landscaping™, manual irrigation, soil moisture sensors, or comparable water conservation technology for all new development
- Require permitted water users to submit goal-based water conservation plans as part of the permit approval process, and monitor the amount of groundwater used by major users
- Establish conservation rate structures that incentivize lower levels of water consumption
- Partner with developers and local governments to establish conservation goals, water budgets and water use monitoring strategies prior to the approval of new development
- Update the Florida Building Code to require indoor and outdoor water efficiency standards for new construction and major remodeling
- Adopt registration and training standards for irrigation professionals
- Construct and incentivize the use of reclaimed water facilities



Photos by David Moynahan Photography





## Recommendations *continued*

### Reduce Personal Water Use

- Use Florida-Friendly Landscaping™ and other measures to reduce or eliminate landscaping water use, and seek formal Florida-Friendly Landscaping™ recognition
- Lessen the need for irrigation by using the right plants in the right locations, grouping them according to water needs, and using rain barrels or cisterns to capture rainwater for irrigation
- Reduce stormwater runoff through mulching plant beds, using porous surfaces for patios, walkways and driveways, and creating swales or low areas to hold and filter water on your property
- Do not water if it has rained in the last 24 hours or if rain is forecast in the next 24 hours
- If an automated irrigation system is used, ensure that it is designed and operated to meet strict water conservation criteria including drip systems, soil moisture sensors, automatic rain shutoff sensors and/or other technology to significantly reduce water use
- Make sure the irrigation system is calibrated correctly and check it regularly for breaks and head alignment
- Select Florida Water Star certified properties when purchasing a new home, and follow Water Star guidelines when remodeling an existing home
- Use Water-Sense labeled high-efficiency appliances to significantly reduce indoor water consumption

### CONCLUDING THOUGHTS

As Florida's population continues to grow, increased pressure is placed on Florida's finite lands and waters. Now is the time to move forward on serious efforts to encourage more compact development, protect

sensitive natural lands and significantly increase water conservation. These efforts will help protect Florida's lands and waters – and the people, wildlife and farms that depend on them now and in the future.



Florida Department of State



David Moynahan Photography



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## About the project partners:

Established in 1984, **Geoplan** is a multidisciplinary GIS laboratory located in the University of Florida's School of Landscape Architecture and Planning, College of Design, Construction and Planning. It was developed in response to the need for a teaching and research environment for Geographic Information Systems, or GIS. Under its auspices spatial analysis is conducted in support of a broad range of academic disciplines. Additional information is available at [www.geoplan.ufl.edu](http://www.geoplan.ufl.edu).

The **Florida Department of Agriculture and Consumer Services** supports and promotes Florida

agriculture, protects the environment, safeguards consumers, and ensures the safety and wholesomeness of food. Our programs and activities are so varied and extensive, they touch the life of just about every Floridian. For more information please visit [www.freshfromflorida.com](http://www.freshfromflorida.com).

Founded in 1986, **1000 Friends of Florida** is a 501(c)(3) not-for-profit organization that focuses on saving special places and building better communities in one of the fastest growing states in the nation. Visit [www.1000friendsofflorida.org](http://www.1000friendsofflorida.org) for more information.

## Acknowledgements:

The working team for this project included representatives of 1000 Friends of Florida, The Department of Agriculture and Consumer Services, and the University of Florida's Geoplan Center.

1000 Friends representatives include Ryan Smart, President, Vivian Young, AICP, Communications Director and Charles Pattison, FAICP, former Policy

Director. The Florida Department of Agriculture and Consumer Services was represented by Corinne Hermle. Geoplan was represented by Dr. Paul Zwick, and Peggy Carr, Professors in the School of Landscape Architecture and Planning.

At the time of this study DACS was under the leadership of Secretary Adam Putnam.

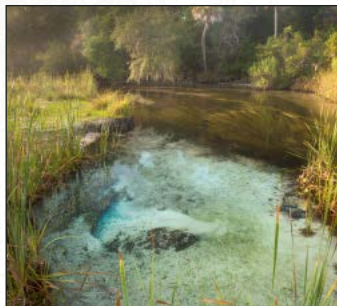
## Members of 1000 Friends of Florida Board of Directors in place at the time of this study were:

Tim Jackson, Chair  
Lester Abberger  
F. Gregory Barnhart  
Lee Constantine

Courtney Cunningham  
Robert S. Davis  
James Nicholas  
Nathaniel Pryor Reed

Roy Rogers  
Earl Starnes  
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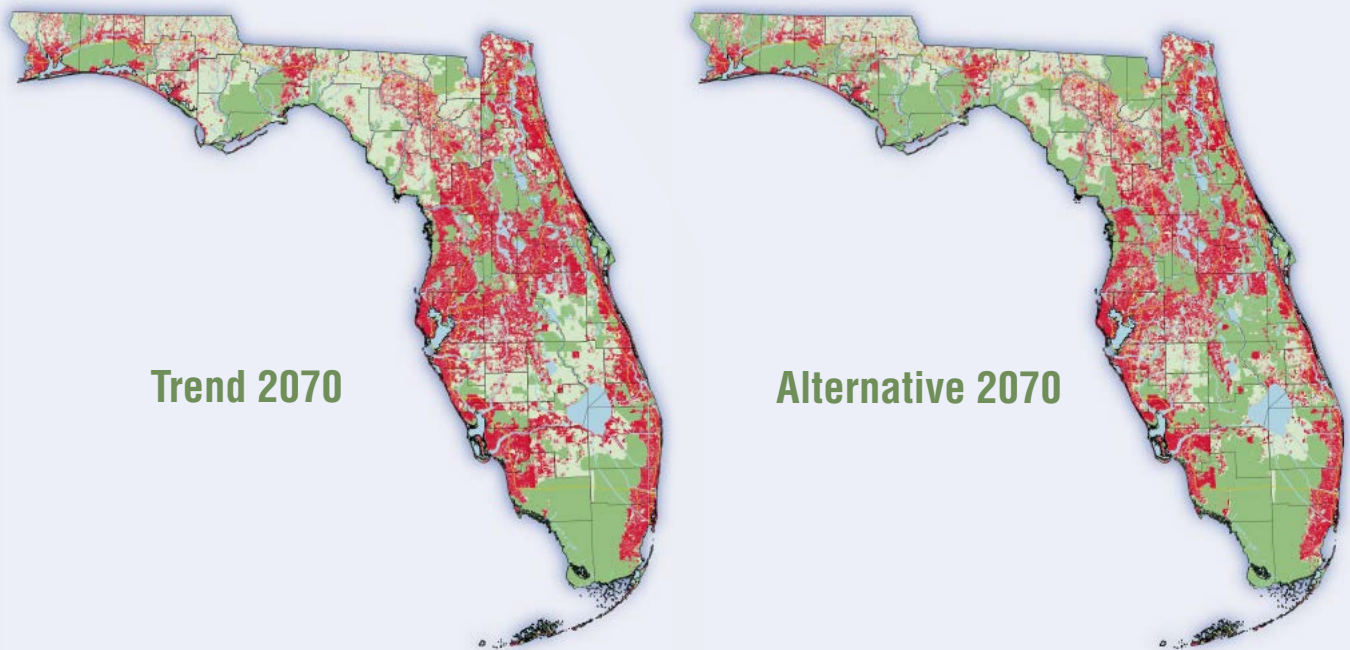
Terry Turner  
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# How Do You Envision Florida's Future?



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