

Sustainability in Local Governments of East Florida: Expanding Opportunities

Ken Lindeman, Professor, Sustainability Program Chair
Department of Education & Interdisciplinary Studies
Florida Institute of Technology



Sustainability Boards in E. Florida: Outline

- Definitions and Geography
- Board Attributes across 13 Counties, >140 Cities
- Diverse Categories and Examples of Products
- Summary, Resources

Sustainability

- The most frequently used definition:
“... development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” = Equity between generations
 - **Brundtland Report, 1987**

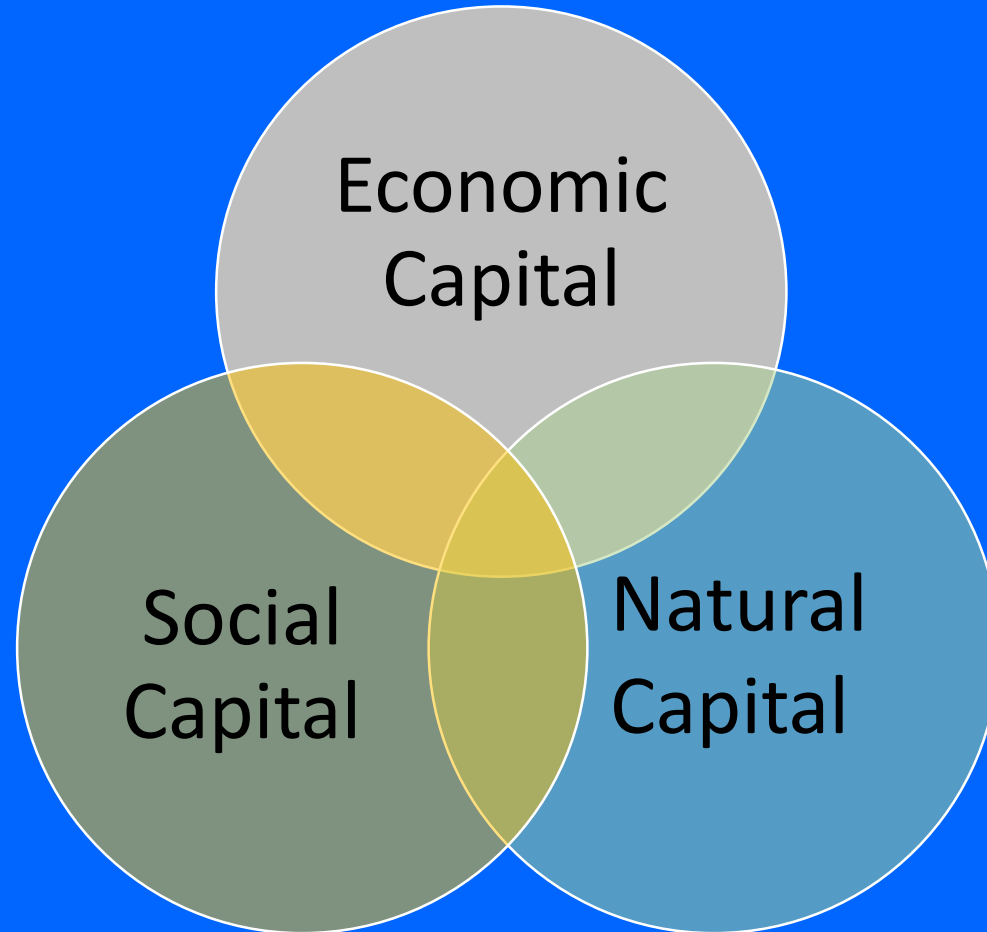


One useful applied definition for sustainability:

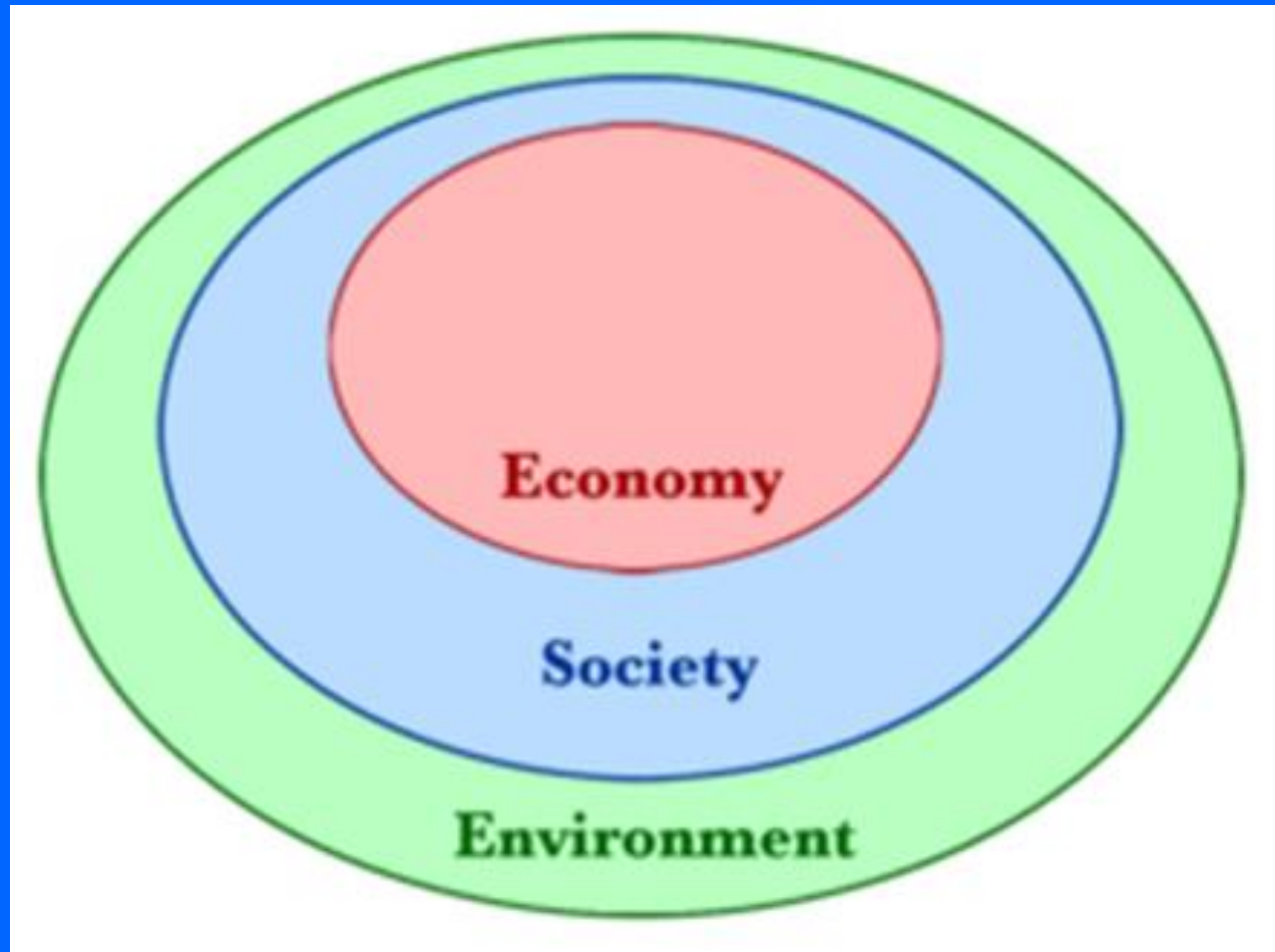
A science-based approach to identify best practices to optimally manage Social, Natural and Economic assets.

- Think long term as well as short term.
- Recognize externalities = off-the-book costs of decisions that are not evaluated beyond 1-5 years out.
What are the greater long term costs – for our kids?

The Three Capitals
capital = assets, resources



The Three Capitals
Have deeper relationships



Another useful definition:

Managing local governments to be better prepared for the long-term - as well as the short-term.

Sustainability attributes

- Formal Business grounding, e.g. undergrads take minimum of 6 business courses, up to 11.
- STEM Science and Engineering x Formal Business = technical managers with skills across core sciences and specialties.
- Dedicated professional project training within all three capitals among multiple sets of disciplines.
- A substantial focus on energy and climate innovation.

Institutional Roles of Sustainability Programs

- decrease operational costs and reduce risk
- catalyze increased or new funding sources
- help attract, retain and motivate top employees
- strengthen community relations and partnerships

(AASHE, 2017)

Spatial Scales: Florida's Atlantic Coast Counties

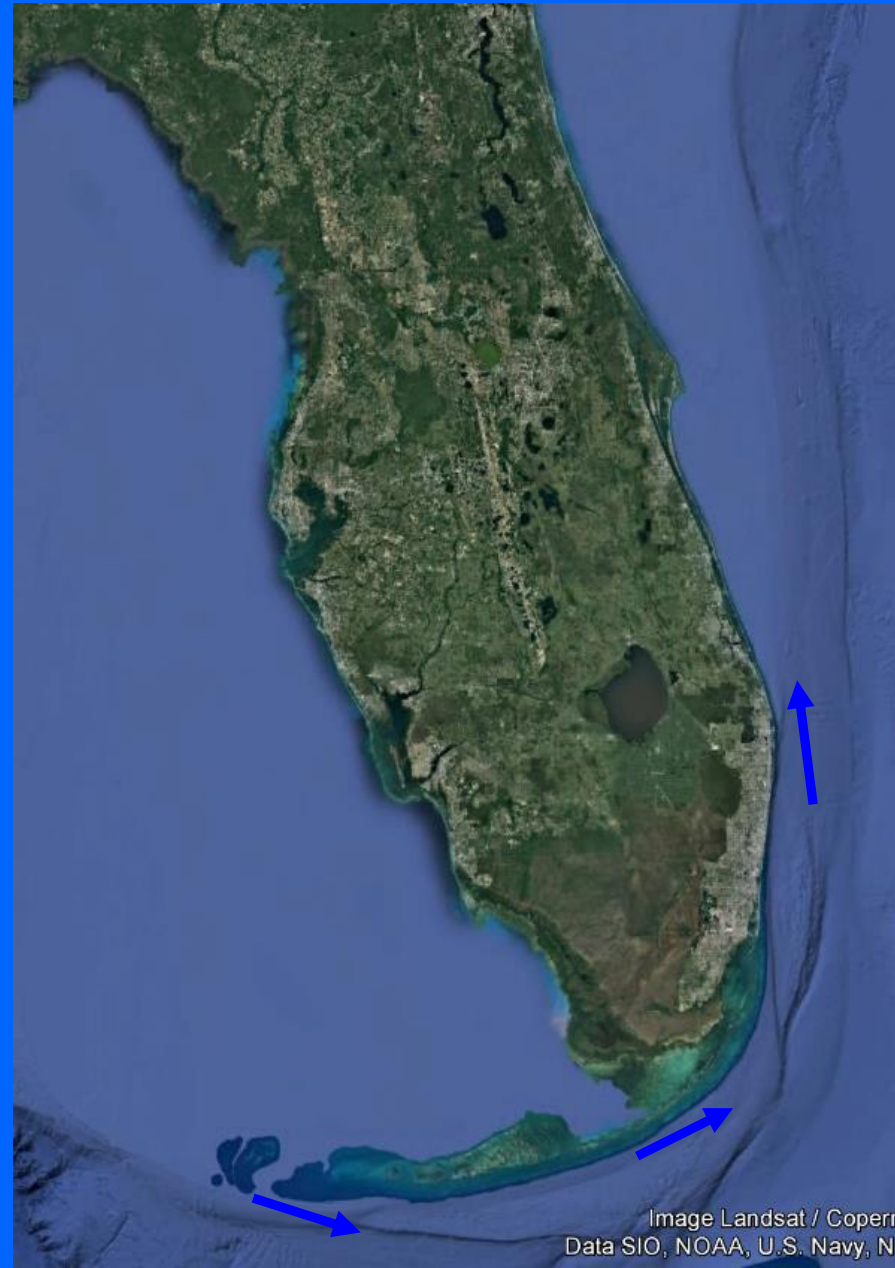
- Three regions
- 13 total counties
 - Number of cities/county \approx 3 to 35



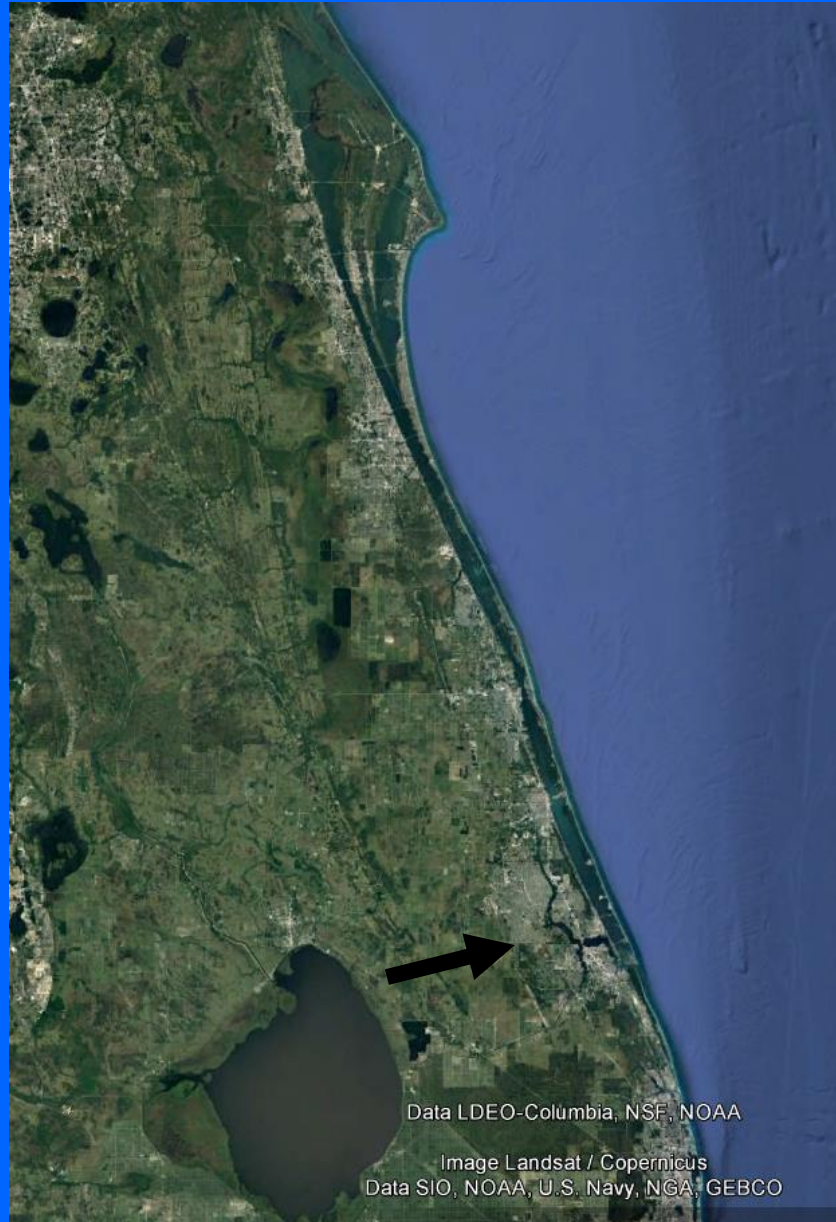
Spatial scales and regional connectivity



Florida Keys Connections to E Florida and the IRL



E Florida-Lake Okeechobee Connections to IRL



Sustainability Boards in E. Florida: Outline

- Definitions & Spatial Scales
- Board Attributes across 13 Counties, >140 Cities
 - E Fl Cities
 - E Fl Counties
 - Cities in Brevard County
- Diverse Categories and Examples of Products
- Summary, Resources

Focal points for information collection:

Citizen Boards or Committees potentially related to S

(not funded city offices or staff)

Two primary categories

1) **Sustainability or Environmental Boards (or Committees)**,
- address all three capitals, - some focus on energy

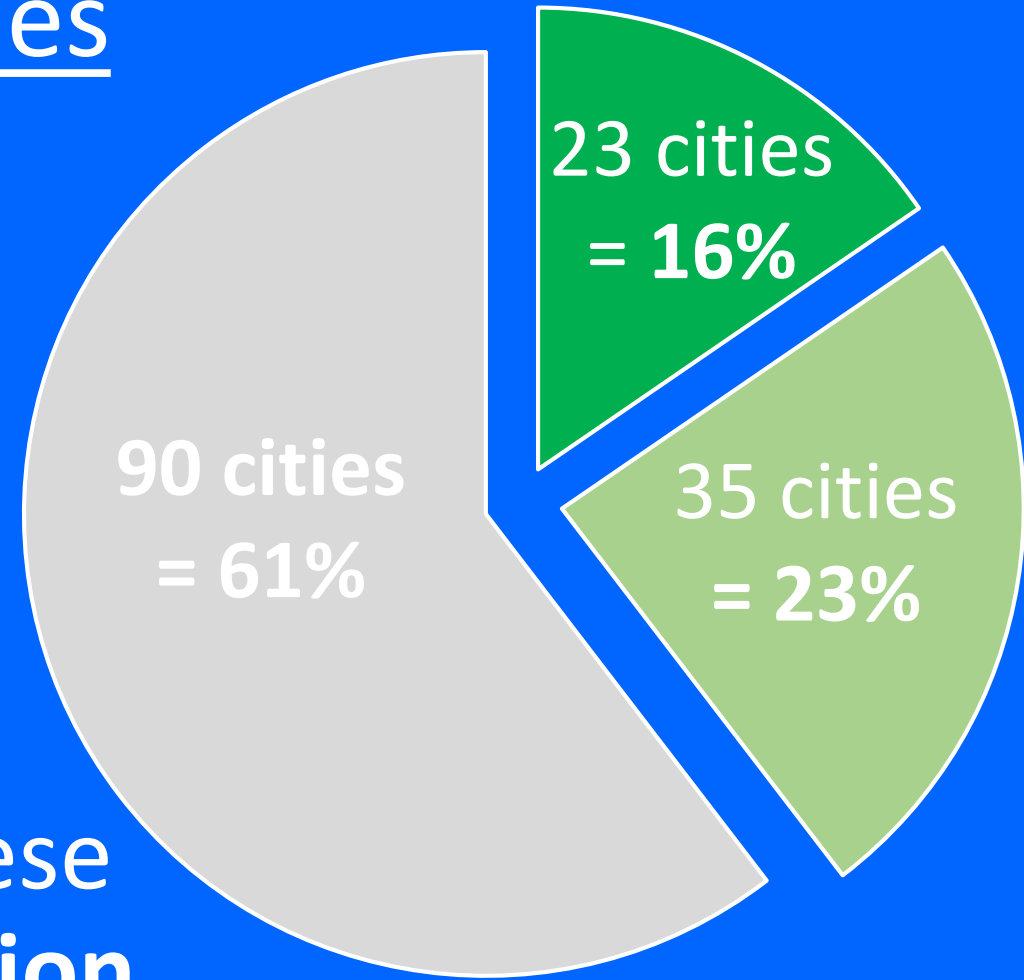
2) **Related Bs and Cs**: e.g. Beautification Boards (or Comm)

Note: “**Boards**” and “**Committees**” can also be termed :
Advisory Boards, Task Forces, Commissions...

13 coastal counties, ≈ 148 Cities

- From Key West to Georgia
- Sust or Envir Brds or Comms:
 - 90 cities w/o any S or E B/C
 - 23 cities w/ S or E B/C
 - 35 cities w/ related B/C*

*: other Bs and Cs: 23/35 of these were represented by **Beautification** and/or **Tree Brds or Comms**



Northeast FL

Estimated City Sustainability Boards

11 total boards among 29 cities, 5 Core S Boards

Number
of Cities

16

14

12

10

Nassau

Duval

St. Johns

Flagler

Volusia

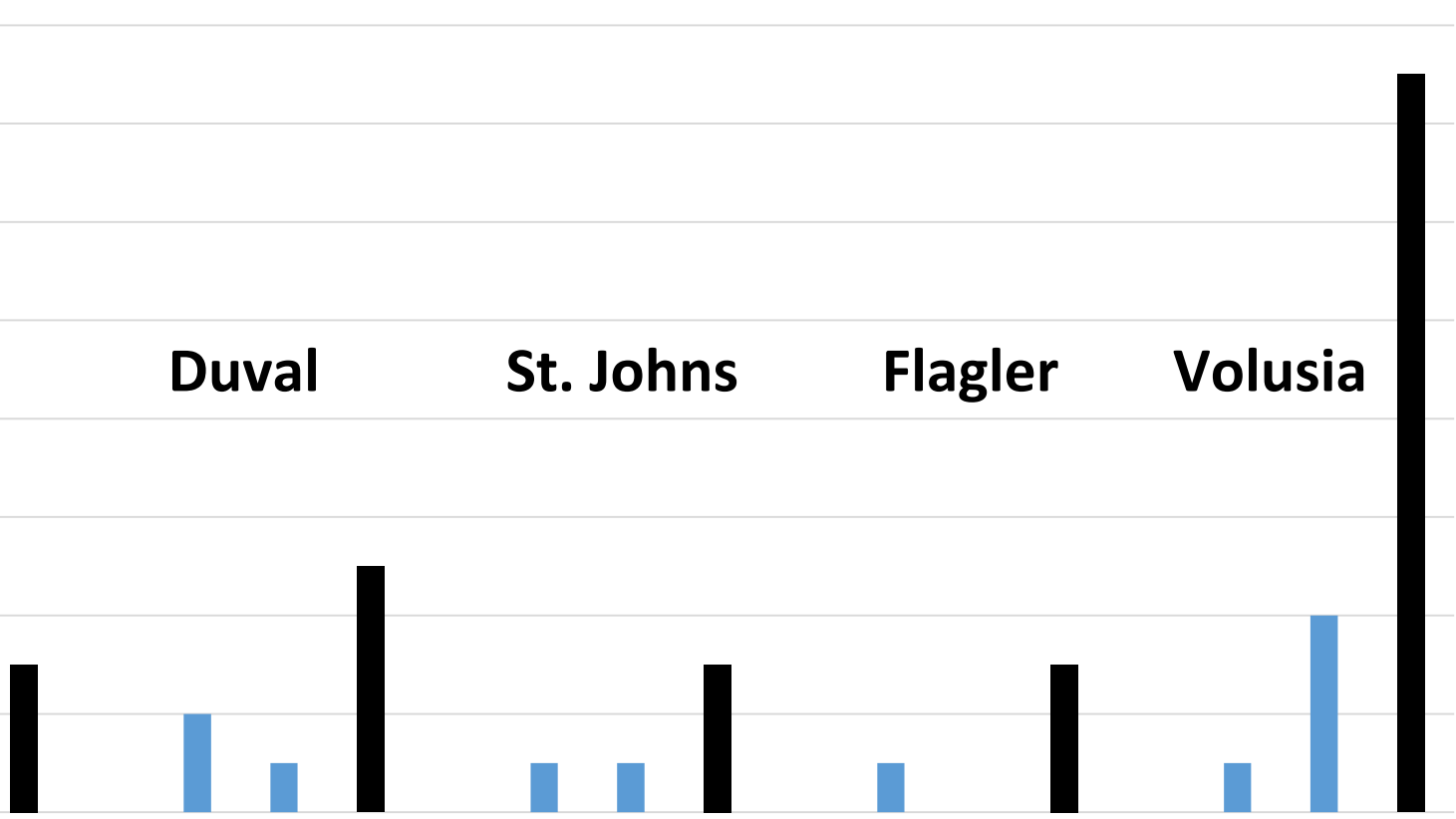
8

6

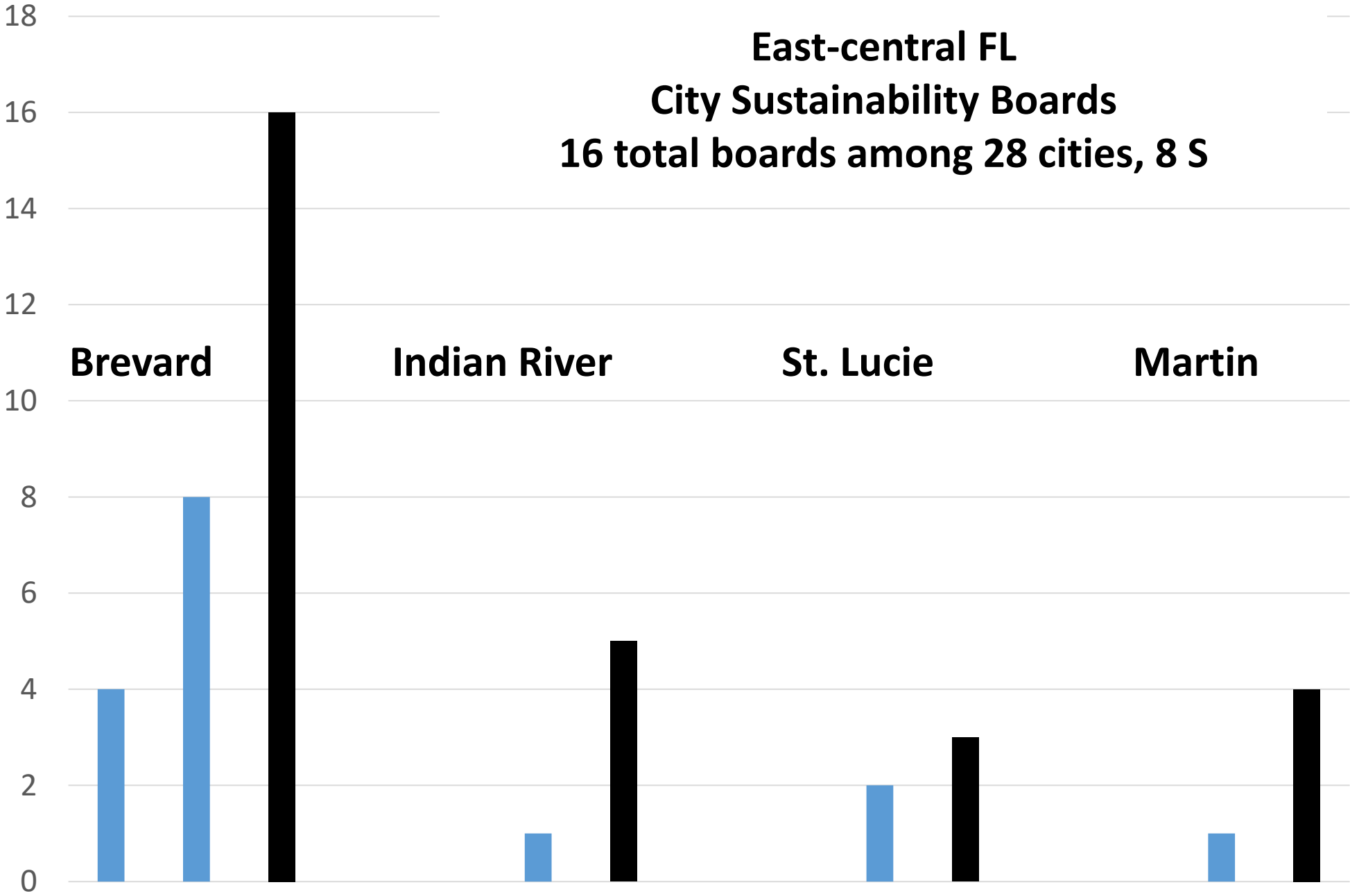
4

2

0

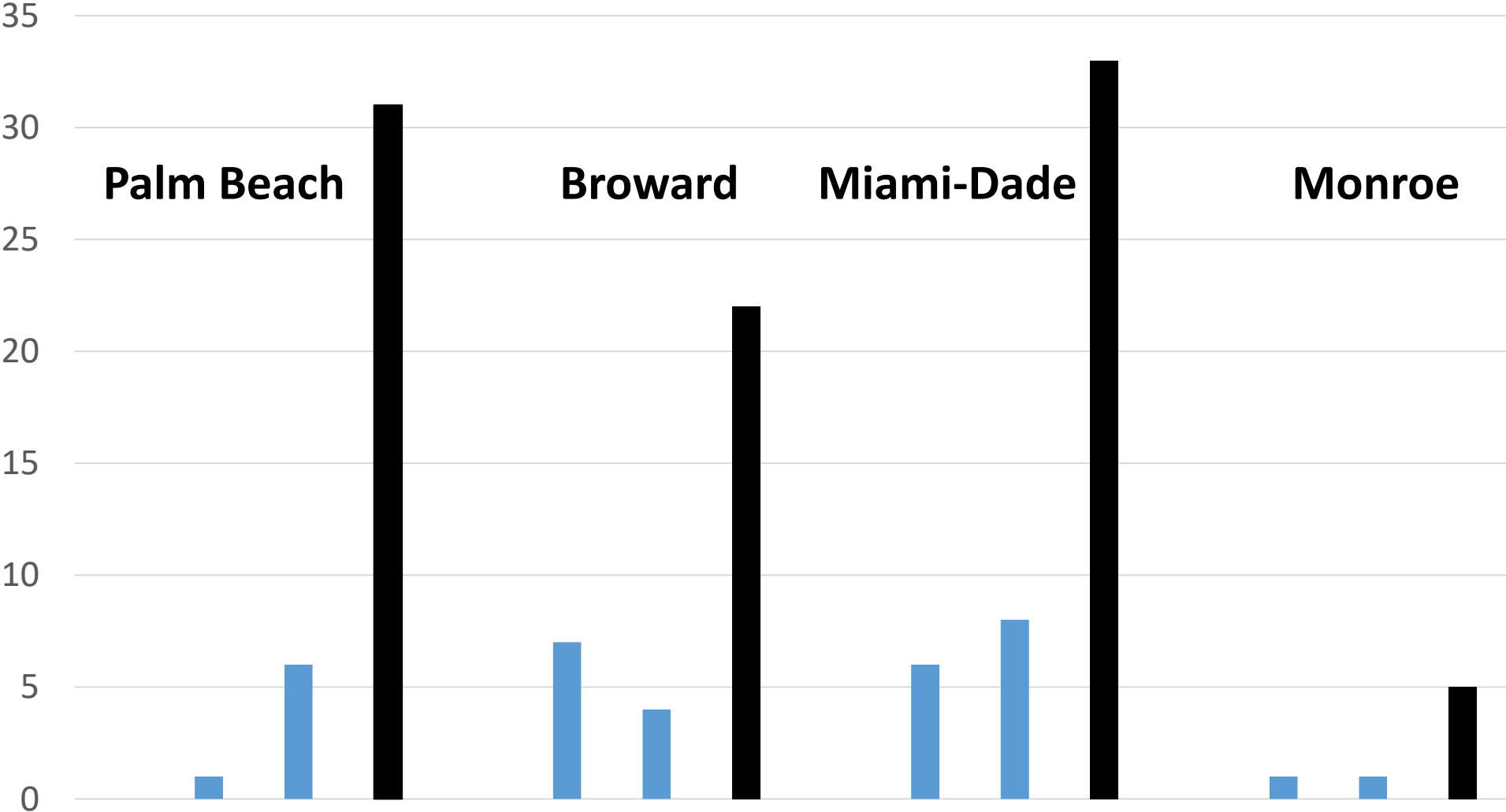


East-central FL
City Sustainability Boards
16 total boards among 28 cities, 8 S



Southeast FL, City Sust. Boards

34 total among 91 cities, 15 S



East Florida City-scale patterns (cont.)

- We probably undersampled.
- Energy focused boards: at least 30 boards...
- At least 20 E FL cities have Sustainability Plans.

SE Florida now takes this quite seriously:

- *South Florida Regional Climate Change Compact*
Steering Committee with representatives from the four Counties and >100 cities .
- *Miami-Dade Office of Resilience*
- *100 Resilient Cities program (100RC)* incl. Miami-Dade Co., and Cities of Miami and Miami Bch.

Major City and County Sustainability Commitments: Staff Sustainability Positions Emerging Include:

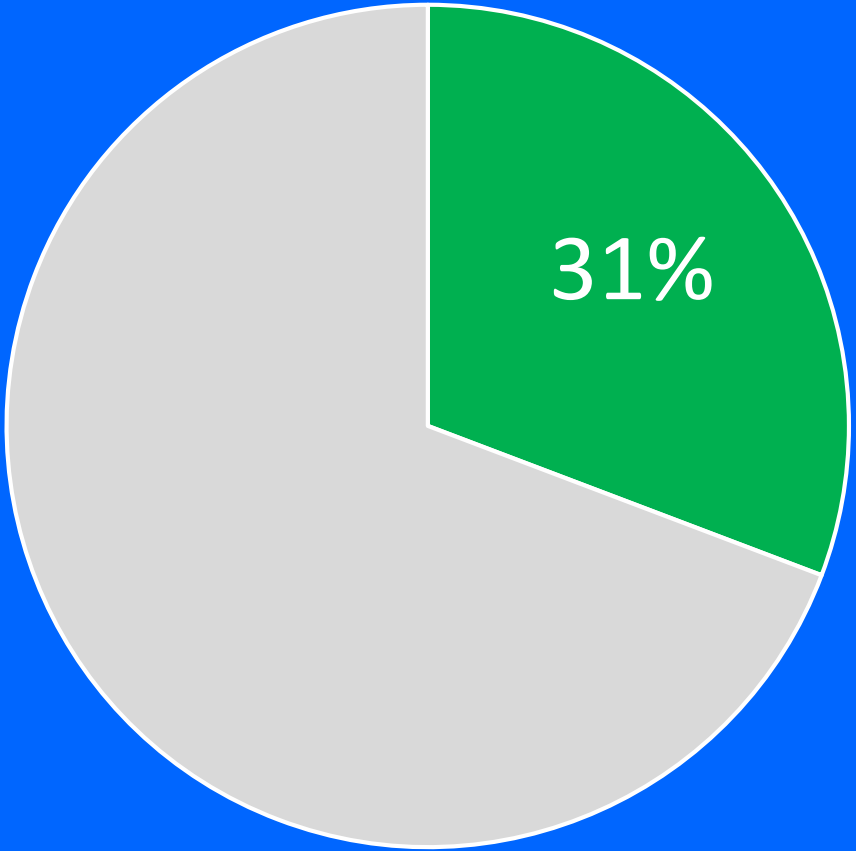
- Sustainability Director, City of Orlando
- Sustainability Manager, City of West Palm Beach
- Environmental Sustainability Coordinator, City of Hollywood
- Environment and Sustainability Director, City of Miami Beach
- Sustainability Director, Monroe County
- Chief Resilience Officer, Miami-Dade County
- Climate Change & Sustainability Coordinator, Palm Beach County

All Local Gov – doesn't include State, Regional and Fed Gov jobs

County –scale patterns

- %s of counties with S or related boards: 0 - 66%.
- SE FL: Broward and Miami Dade have a lot of boards and *other major S commitments*.
- 1/3 of the counties (4 of 13) have S Plans
- Brevard is well-positioned among Florida's Atlantic east central and northeast coastal counties.

East Florida Counties with *Sustainability Plans*

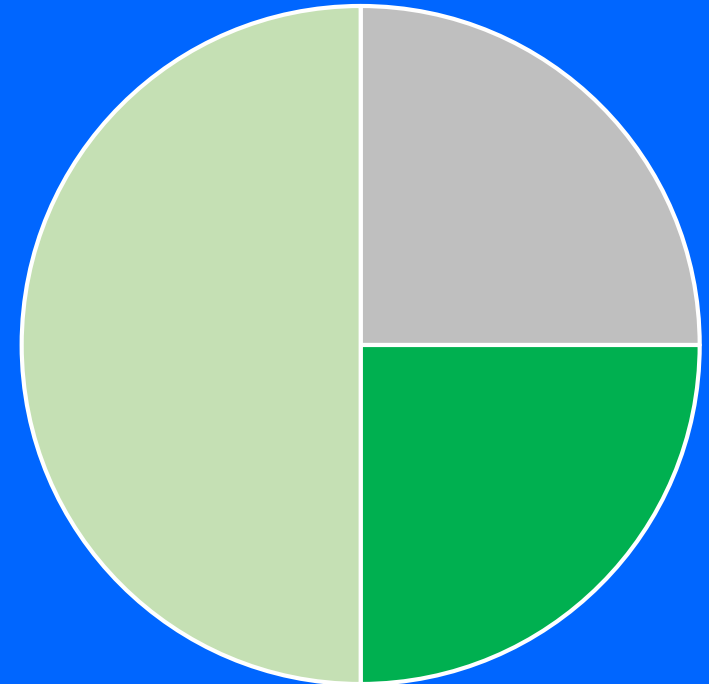


- Volusia
- Broward
- Miami-Dade
- Monroe

Cities within Brevard

Sustainability board patterns incl:

- 4 cities w/o any S or E B/C
- 4 cities w/ S or E B/C
- 8 cities w/ related B/C*



Cities within Brevard cont.

S related boards: **7/8** of these were represented by **Beautification / Tree Boards** or Comms

There is much going on around our large county...

Substantial potential for *synergistic* partnerships.

Sustainability Boards in E. Florida: Outline

- Definitions & Spatial Scales
- Board Attributes across 13 Counties, >140 Cities
- What Can S Boards Do?
- Summary, Resources

What Can S Boards Do?

- Look at their Master S Planning Documents...

FL cities with Sustainability Plans (at least 20):

Orlando

Fort Lauderdale

Palm Bay

Coconut Creek

Hollywood

Satellite Beach

Davie

Tampa

Tallahassee

Pinecrest

Key Biscayne

Miami Beach

Marathon

Winter Park

West Palm Beach

Islamorada

Delray Beach

Clearwater

Largo

DeLand

Sustainability Plans in Brevard

City of Satellite Beach, 5 focal categories:

- **Built Environment**
 - **Land & Water Systems**
 - **Energy & Transportation Systems**
 - **Community Outreach**
 - **Quality of Life**
- >30 subcategories and 120 metrics

Palm Bay Sustainability Master Plan

Sustainability plan and energy strategy goals include:

- Create green jobs
- Reduce municipal energy consumption and operating costs
- Reduce greenhouse gas emissions w/o affecting services

What Can S Boards Do? Lagoon Friendly Gardening

- Reduce fertilizer and sediment run-off into the lagoon.
- . . . Lever existing resources with existing Tree or Beautification Boards.
- Move forward on smart certification programs such as the KBB Lagoon Friendly Lawn Program and the MRC's Green Business Program.
- Rethink landscapes with local businesses
- Rethink landscapes with local schools



Protecting the Indian River Lagoon starts right in your backyard! Keep Brevard Beautiful's new Lagoon Friendly Lawns program, in partnership with the Indian River Lagoon National Estuary Program, is recognizing local residents who are helping to prevent algal blooms and fish kills by minimizing nutrient pollution and stormwater runoff from their yards and restoring ecosystem functions with native plants.

The Indian River Lagoon is one of the most biologically diverse estuaries in North America, providing a home for more than 4,000 species and contributing \$3.7 billion per year to local economies. But nutrient pollution from sources like lawn fertilizer and runoff from residential areas fuels large-scale algal blooms that can smother critical seagrass beds and cause massive fish kills. This ecosystem collapse impacts both people and wildlife.

Through the Lagoon Friendly Lawns program, we can all be part of a community-level solution by making positive behavior changes when it comes to the care and keeping of our lawns.

Certify Your Yard!

 **SUBMIT APPLICATION**

[Click here to apply for Lagoon Friendly Lawn certification.](#)

 **SUBMIT PHOTOS**

[Click here to submit photos of qualifying landscape features from your application.](#)

Member Benefits



Eligible applicants get a beautiful lawn sign to showcase their efforts! Silver and Gold Award winners also get a special plaque



Replacing Turf Lawn with Native Wildflower Gardens



- Lay down pre-cut plywood, weight it.
- Wait 3-4 weeks, spade-shovel the dead turf out, good exercise!
- Insert *awesome* natives! Repeat.



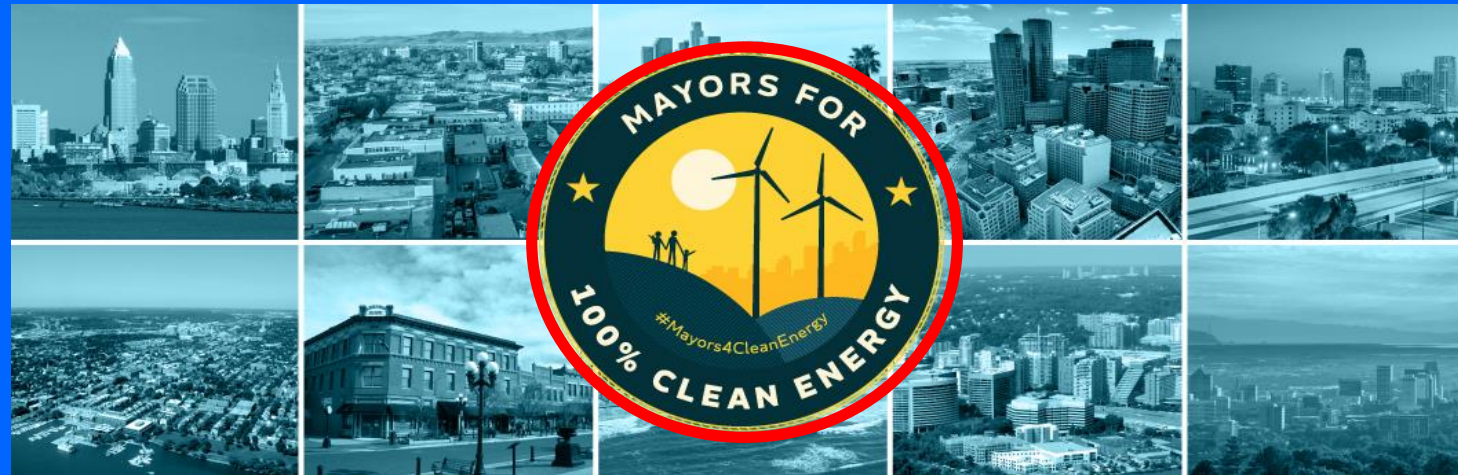


What Can S Boards Do?

Improve Energy Use

- Use less energy, Modify sources, Reduce emissions
- Save money in the short-term, and long-term
- Enhance the brand
- Position better for grants

MANY resources available to guide city energy evaluations and alternative evaluations



Meet the Mayors For 100% Clean Energy

These are the mayors supporting a vision of 100% clean and renewable energy in their cities, towns, and communities, and across the country.



Mayor Philip Levine
Miami Beach, FL
CO-CHAIR



Mayor Jackie Biskupski
Salt Lake City, UT
CO-CHAIR

Photo Credit: CC/WildBlueEyes



Mayor Steve Benjamin
Columbia, SC
CO-CHAIR

Photo Credit: CC/Sheriffas4



Mayor Kevin Faulconer
San Diego, CA
CO-CHAIR

Photo Credit: City of San Diego

Local
Governments for
Sustainability
(ICLEI)
- much
information
on energy savings
and emission
reductions.

ICLEI's 10 Keys to Sustainability Planning Success

The following guidance has been excerpted and distilled from ICLEI's 56-page Sustainability Planning Toolkit, which is available exclusively to ICLEI local government members at www.icleiusa.org/sustainabilitytoolkit.

ICLEI's Five Milestones for Sustainability represent the fundamental steps local governments should follow on their sustainability journeys. Below are some of the keys to success for completing each milestone.

Pre-Milestone Planning: Making a Commitment, Forming a Team

Key #1: Hire a sustainability coordinator to run the show.

Many hands will touch a sustainability plan and many voices weigh in, but one person must be the quarterback, and in countless cities that's a sustainability coordinator. To coordinate the planning process for [Baltimore's sustainability plan](#), for example, Mayor Sheila Dixon created an Office of Sustainability within the Department of City Planning. The City designated one project manager to coordinate the planning process full-time and added a part-time manager as well.

Key #2: Obtain buy-in from a big wig.

Buy-in from an elected official is essential. The chief elected official will play a critical role in communicating key messages to the public and ensuring the commitment and participation of government departments. In New York, Mayor Michael Bloomberg's strong and visible commitment drove the creation of [PlaNYC](#).

Key #3: Form teams that build bridges across city departments—and beyond city hall.

Bringing together the right people is an essential first step in the planning process. Developing a sustainability plan requires participation and commitment from a variety of governmental departments, which should be represented on an interdepartmental team.

To shape its plan, a local government also needs to draw on a diversity of outside experts and community leaders knowledgeable in a range of fields. For example, City of New York formed a 17-member sustainability advisory board comprised of elected officials,

What Can S Boards Do?

- Look at their Master S Planning Documents...

The SB Sustainability Plan has links to these documents:

Orlando

Fort Lauderdale

Palm Bay

Coconut Creek

Hollywood

Satellite Beach

Davie

Tampa

Tallahassee

Pinecrest

Key Biscayne

Miami Beach

Marathon

Winter Park

West Palm Beach

Islamorada

Delray Beach

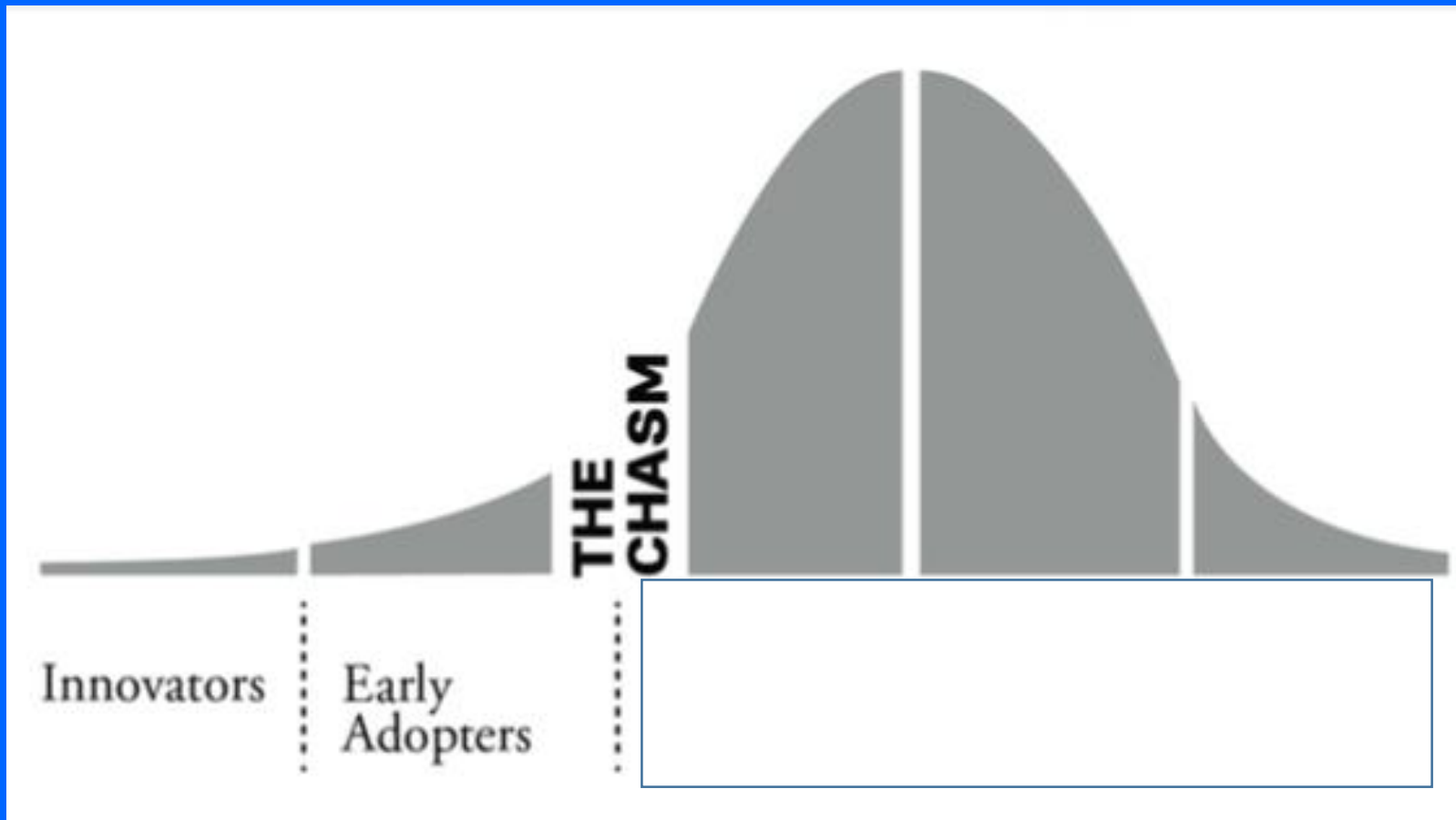
Clearwater

Largo

DeLand

Sustainability Boards in E. Florida

- Definitions & Spatial Scales
- Board Attributes across 13 Counties, >140 Cities
- What Can S Boards Do
- Summary and Resources



Moore, 1991

- Dictionary definition of “to sustain”:
“**maintain**”, “**support**”, or “**endure**”
- Foundational concepts for *long-term* success
- These are fundamental American concepts...
- Be prepared...

These findings suggest:

We probably do not want to miss opportunities to use sustainability boards to improve city performance on major issues: water and land use, energy, transportation, socio-economic performance, etc.

We appear to be in a position *to accelerate the achievement of many logical goals - based on what citizens decide.*

Regional resources include

- Many non-profit organizations
- Central Florida Clean Cities Coalition
- Florida Solar Energy Center
- Odyssey School, Verdi Ecoschool
- IRL Council
- League of Cities – *per county*
- The Counties and Cities themselves
- The nonprofits... ..
- Multiple sectors of the Business Community... ..

Thanks to:

- C. Barker and her staff, the elected officials we have worked with in and outside of SB, Dr. J. Fergus, the SB SB, B. Schoppaul, and the diverse community organizations working on these issues.
- Other FIT students who have worked as paid interns at SB:
 - Jessica Morse, co-drafted original Sustainability Assess. Report
 - Alexis Miller, sustainability wizard
 - Assav Harania, renewable energy wizard

Many Others...

Questions?

lindeman@fit.edu

www.fit.edu/sustainability

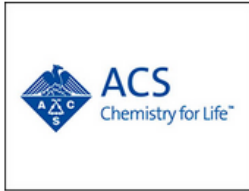
Statement on climate change from 18 scientific associations

"Observations throughout the world make it clear that climate change is occurring, and rigorous scientific research demonstrates that the greenhouse gases emitted by human activities are the primary driver." (2009)²



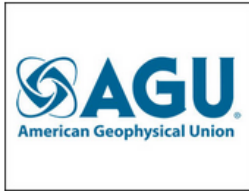
American Association for the Advancement of Science

"The scientific evidence is clear: global climate change caused by human activities is occurring now, and it is a growing threat to society." (2006)³



American Chemical Society

"Comprehensive scientific assessments of our current and potential future climates clearly indicate that climate change is real, largely attributable to emissions from human activities, and potentially a very serious problem." (2004)⁴



American Geophysical Union

"Human-induced climate change requires urgent action. Humanity is the major influence on the global climate change observed over the past 50 years. Rapid societal responses can significantly lessen negative outcomes." (Adopted 2003, revised and reaffirmed 2007, 2012, 2013)⁵



American Medical Association

"Our AMA ... supports the findings of the Intergovernmental Panel on Climate Change's fourth assessment report and concurs with the scientific consensus that the Earth is undergoing adverse global climate change and that anthropogenic contributions are significant." (2013)⁶



American Meteorological Society

"It is clear from extensive scientific evidence that the dominant cause of the rapid change in climate of the past half century is human-induced increases in the amount of atmospheric greenhouse gases, including carbon dioxide (CO₂), chlorofluorocarbons, methane, and nitrous oxide." (2012)⁷



American Physical Society

"The evidence is incontrovertible: Global warming is occurring. If no mitigating actions are taken, significant disruptions in the Earth's physical and ecological systems, social systems, security and human health are likely to occur. We must reduce emissions of greenhouse gases beginning now." (2007)⁸



The Geological Society of America

"The Geological Society of America (GSA) concurs with assessments by the National Academies of Science (2005), the National Research Council (2006), and the Intergovernmental Panel on Climate Change (IPCC, 2007) that global climate has warmed and that human activities (mainly greenhouse-gas emissions) account for most of the warming since the middle 1900s." (2006; revised 2010)⁹

SCIENCE ACADEMIES

International academies: Joint statement

"Climate change is real. There will always be uncertainty in understanding a system as complex as the world's climate. However there is now strong evidence that significant global warming is occurring. The evidence comes from direct measurements of rising surface air temperatures and subsurface ocean temperatures and from phenomena such as increases in average global sea levels, retreating glaciers, and changes to many physical and biological systems. It is likely that most of the warming in recent decades can be attributed to human activities (IPCC 2001)." (2005, 11 international science academies)¹⁰



U.S. National Academy of Sciences

"The scientific understanding of climate change is now sufficiently clear to justify taking steps to reduce the amount of greenhouse gases in the atmosphere." (2005)¹¹

<http://climate.nasa.gov/scientific-consensus/>



Dune Daisy

Florida Silver Palm

Leatherjacket Fern

Sea Grape

Railroad Vine

Blue Plumbago

Fiddlewood

Firebush

Indian Blanket Flower

Muhly Grass

Goldenrod

Air-bromeliad

Live Oak

- Community scale conclusion's
- EJ Outreach

Resources:

- ICLEI
- LEED
- FGBC
- Native PS

NOAA

- Systems science courses and project training. An emerging stand-alone science, systems sci principles are widely used for decomposing complexity in multiple government, business and academic sectors.
- Large focus is not bad entrepreneurship.
- Interdisciplinary projects applied to real-problems over a year-long senior project course sequence.
- To operate as seamless as feasible across disciplines,

Objective:

- To identify the numbers and attributes of citizen S boards/committees across FL's 13 Atlantic Coast counties
 - To identify patterns...

County Sustainability Plans not present in

- Palm Beach
 - Martin
 - St. Lucie
- Indian River
 - Brevard
 - Flagler
- St. Johns
 - Duval
 - Nassau