100 GREAT IDEAS
Climate Resilience & Sustainability

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Themes Identified
The following themes emerged as we synthesized the ideas and comments:

1. Energy Efficient Buildings & Homes
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Thank You 37
What is 100 Great Ideas?

100 Great Ideas campaigns are 5-day community brainstorms, produced by Radical Partners, that invite thousands of locals to engage around issues that matter to the future of our region. These brainstorms are held in the “100 Great Ideas South Florida” Facebook Group to enable people to engage from anywhere, at any time. We synthesize the top ideas from each campaign into easy-to-digest reports which we share broadly with the community as well as elected leaders and community leaders to accelerate solutions, promote positive civic discourse, and narrow the distance between communities and their leaders. Previous campaigns focused on the Miami-Dade Public Library System, the Miami International Airport, transit and mobility, and housing affordability. To learn more about 100 Great Ideas, as well as details about previous campaigns and which ideas have been implemented, visit www.radical.partners/100greatideas.

Why do we do it?

Despite how important civic engagement is to the health of communities, the existing mechanisms for civic engagement are tedious, difficult to access, and produce minimal outcomes. Significant privilege is often required to engage in most of the available channels for community input. Often, little context is provided to attendees, input is prioritized as an afterthought, and community voice is taken in analog form which requires live attendance, lengthy wait times, and no way for leaders or participants to get a pulse of trends at large. 100 Great Ideas is an effort to leverage technology as an on-ramp for more effective and accessible civic engagement. This platform enables communities to dialogue purposefully about issues of regional importance and to synthesize public opinion so that leaders can internalize the voice of their constituents when making decisions. By creating a new model for engagement between locals and leaders, we seek to elevate under-represented voices and bring to the forefront impactful solutions that may have previously gone unheard.

This year’s campaign

For our fifth campaign, we chose to focus on Climate Resilience & Sustainability. We were lucky to work with a passionate host committee of climate experts, leaders, and organizations and we thank them greatly for bringing their expertise and engagement to the campaign:

We are also grateful for the generosity of NBCUniversal and The Miami Foundation who sponsored this campaign and to the Citi Foundation and The John S. and James L. Knight Foundation for their enabling support of Radical Partners.
Why Climate Resilience & Sustainability?

Climate resilience and sustainability is a critical issue facing our South Florida region. Since the onset of the industrial revolution, our climate has warmed rapidly due to our increasing use of fossil fuels. This rapid warming of our climate has brought many negative consequences that affect all of us – in South Florida and all around the world. Consequences include: increasing temperatures, warmer oceans, rising sea levels, and intensifying extreme weather events.

These changes all come with very real effects on humans, especially our most vulnerable populations. Human consequences include:

— **PUSHOUT**: Millions of homes and residents across South Florida face the threat of sea level rise and many expect to be pushed out of their residences, and even the region, due to climate gentrification and flooding. Florida has more residents at risk from climate change than any other US state and sits at the top of the list nationwide for homes at risk.¹³

— **HEALTH RISKS**: All individuals, but especially young people, the elderly, those with disabilities, and low-income, low-wealth communities, have greater exposure to heat stroke, severe weather injuries, insect-borne diseases like Zika virus, and respiratory diseases such as asthma and allergies due to increased temperatures.⁴

— **ECONOMIC LOSS**: Many South Florida economies, jobs, and industries, like the fishing, agricultural, and tourism industries, face risks due to climate-change-induced toxic algae blooms, declining coral reefs, drought, and increased threat from extreme weather events.⁵

— **LACK OF CLEAN WATER**: South Florida’s clean water supply is at-risk from sea level rise, flooding, and extreme weather.⁶

The impacts of climate change are alarming and will affect all of us. Without significant policy interventions, we are likely to experience skyrocketing food prices, large increases in insurance costs, rapid spreading of disease and illness, expanding homelessness, declining drinking water supply – the list goes on. Thus, we must focus on building a more resilient region - one that can absorb and bounce back from the impacts of climate change. If we do not take immediate action on climate change and prioritize resilience, our homes, our health, our jobs, and our lives are at risk.

So, what can we do about climate change? We must focus both on climate change mitigation (actions to limit the magnitude or rate of long-term global warming and its related effects) and climate change adaptation (actions in response to global warming to offset its impacts). This report includes many strategies – suggested by locals – on how we can implement both mitigation and adaptation strategies. Now, what we need most is leaders to come forward and be willing to take bold action to implement these strategies.

To learn more about our changing climate, visit climate.nasa.gov/evidence.


Building a more climate resilient and sustainable South Florida requires meaningful idea generation, investment, and partnership across sectors. This 100 Great Ideas brought together more than 3,100 community members across a variety of sectors (government, advocacy, policy, grassroots organizing, research, etc.) to brainstorm on the best ways to build a more climate resilient and sustainable South Florida. Here's what happened:

5 days
3,111 group members
262 submissions
1,659 comments
6,336 reactions

From this engagement:

497 unique ideas submitted
8 Themes
Theme I:

Energy Efficient Buildings & Homes

Commercial buildings and homes are the leading consumers of electricity in Florida, which accounts for over 50 percent of our total emissions. To reduce our emissions, we must strongly consider options that make our buildings and homes more energy efficient - both by reducing our energy usage (cooling, lighting, refrigeration, etc.) and taking advantage of renewable energy sources such as solar and wind.

A large portion of global and local emissions comes from the construction and maintenance of buildings. Producing iron, steel, and concrete for the construction of buildings emits significant amounts of carbon dioxide; the iron, steel, and cement industries all together produce around 10 percent of total world greenhouse gas emissions. In addition, energy usage within buildings and homes - which includes cooling, heating, lighting, refrigeration, clothes drying, powering electronic devices, dishwashers, etc. - requires immense amounts of electricity and natural gas. The energy that we consume in Florida is carbon intensive - 70% of our electricity comes from burning natural gas and an additional 13% comes from burning coal. The use of this carbon intensive electricity in our homes and offices directly contributes to our warming climate.

While Florida (the Sunshine State) has significant solar energy potential, over the past decade, Florida has lagged behind other states in solar energy production; Florida ranks 3rd in the nation for solar potential, but only 12th in solar capacity installed. So, why haven’t we installed more solar generating capacity? Solar energy has been constrained due to 1) uncertainty in pricing (variable costs, payback periods, access to grid resources), 2) low natural gas prices, and 3) uncertainty around whether you’re allowed to install solar on your rooftop. In addition, Florida has not yet set a standard or goal for renewable energy, as has been adopted in 29 states, the District of Columbia, and three U.S. territories. In order to expand Florida’s use of solar and other renewable energies, we must consider both regulatory and market solutions.
Top Solutions

There are many ways that we can create systems and policies to incentivize or require a reduction in energy use - as well as make personal choices to reduce our residential/commercial energy consumption:

**01 Expand energy efficiency building ratings:**

— “Next time you go to rent an apartment, wouldn’t it be nice to get a letter grade telling you how efficient your new building is? Dozens of other cities – none of which are as cool as Miami – already have policies in place that give consumers this type of information. We can then reward good buildings by giving them our business and encourage less-efficient buildings to get better through improvements/renovations/retrofits. For the most part, these policies require large (> 50,000 sq. ft.) public, commercial, and residential buildings to use a well-established rating system (EnergyStar) and report the results to potential renters and buyers. This won’t solve all of our city’s (or planet’s) climate problems – but it is a small improvement with a proven model that could be implemented immediately.” (Jeremy Klavans)

**02 Make use of roofs:**

— “In South America, green roofs have been the best solution to control high temperature for decades. It’s time to apply these solutions here too.” (Ceci Be)

**03 Introduce a Renter’s Bill of Rights:**

— “There could be a bill of rights for renters that require owners to maintain properties in better and more energy efficient conditions. Some items could include requiring screens in doors/windows, having updated doors/windows with less leakage, requiring tint or shades for full-sun exposed windows, requiring all bulbs to be LED/CFL. If residents knew this, they might take on some of the ‘enforcement’ by asking for these things to be implemented since it will also save them money on bills.” (Jessica Rabascall)

**04 Require energy efficiency:**

— “Require that all new real estate development projects being more energy resilient/self-sufficient, but subsidize the additional construction costs that this will require.” (Benji Power)

— “I would include strict green requirements for new construction on the Florida Building Code (FBC), especially for public buildings.” (Ceci Be)

**05 Cool buildings more efficiently:**

— “[There is] a company, SkyCool Systems (skycoolsystems.com/#the-future-of-cooling), that uses technology in a commercially viable way (aka it saves companies money by lowering their A/C bills), so hopefully it will be available in South Florida soon.” (Brent Saiontz)
Wash your clothes in cold water:
― “Most Americans still wash their laundry in warm water, which costs more money and takes a toll on the environment. Approximately 75 percent of the total energy use and greenhouse-gas emissions produced by a single load of laundry come from warming the water itself. That’s unnecessary, especially because studies have shown that washing in cold water is just as effective as using warm. Let’s take this small easy tip into consideration and lower our footprint.” (The CLEO Institute)

Another way to lower our emissions with regards to buildings and homes is to harness renewable energy sources such as solar and wind:

Leverage solar power:
― “Require that all new construction incorporate solar panels on the roof. Apartments without solar roofs could pay into a fund that helps low-income homeowners put up solar panels.” (Sam Van Leer)

Join a solar co-op:
― “You can take advantage of joining a solar co-op through FL SUN. There is a Miami-Dade chapter.” (The CLEO Institute)

Power government facilities with solar:
― “I had commissioned a report last year directing the County to evaluate all of our public land to see how we could go solar in a big way. That initial report focused on opportunities to incorporate solar on rooftops for county buildings. I’m excited to pursue some of those projects and to include the recommendations that would require a solar evaluation for all future County building projects.” (Daniella Levine Cava)

Bring solar power to Miami International Airport:
― “Tallahassee airport has a big solar farm covering 120 acres. Miami International Airport is a great location for solar due to the vast amount of surrounding open space needed.” (Dave Doebler)

Move to 100% clean & renewable energy:
― “An idea for municipalities and building owners to consider: Transition to 100% clean and renewable energy! The transition to 100% clean and renewable is a comprehensive process that involves community or organizational planning, energy conservation measures, infrastructure upgrades, and energy storage pilots. So when you commit to 100% renewable energy, you incentivize and reap a whole host of benefits! Check out Readyfor100.org to learn from the 99 cities, 11 counties and 2 states already working on this transition.” (Emily Bliss)
Require energy providers like FPL to use renewable energy sources:
— “Could the county require FPL in their upcoming contract that allows them to operate in the county - or as a provider to the city - that x% need to come from renewables? And then increase that every time?” (Dave Doebler)

Take advantage of wind:
— “Vertical Axis Wind Turbines are worth considering. They don’t generate as much power, but they have low startup speeds, may be quieter, and don’t seem to kill birds like typical windmills.” (Sam Van Leer)

Create a green revolving loan fund:
— “One idea any municipality, organization or entity can try: establish a green revolving fund! A green revolving fund turns any savings into a pool of money for re-investment. For example, you pay $100 per month on electricity and you install new windows and doors which bring your monthly electricity bill down to $50 dollars per month. You continue paying $100 per month, and the $50 saved goes into an account to be invested in the future.” (Emily Bliss)

Build with wood:
— “Building with wood could reduce annual global emission of carbon dioxide by 14 to 31 PERCENT. Conventional wisdom suggests that wood and high-rise buildings are incompatible, and that flammability is an issue. A renaissance in the processing and manufacturing of wood is challenging those limitations. New high-performance products are more fire resistant, as well as more cost-effective and stronger than ever. What’s more, they can be prefabricated and then put together like a giant piece of furniture, reducing construction costs.” (The CLEO Institute)
Transportation

The transportation sector - vehicles, planes, busses, trains, etc. - is the second largest contributor to greenhouse gas emissions in Southeast Florida, which accounts for 49 percent of our total emissions. To curb our transit-related emissions, we need to build a more effective and energy-efficient transportation infrastructure - including comprehensive, safe public transit and walking/biking/scooting infrastructure - as well as encourage locals to make more environmentally conscious transit choices.

In 2015, transportation accounted for 49 percent of Miami-Dade emissions - a significantly higher percentage than similar-sized cities like Chicago (25 percent), Washington D.C. (23 percent), and Denver (20 percent) who have more effective, and thus more frequently used public transit, walking, and biking infrastructure and systems. Comparatively, Miami-Dade County's public transit infrastructure is severely lacking; it received an average grade of "D" from Transit Alliance Miami. Riders continue to express discontent with the system and ridership has declined precipitously since 2014.

In addition to improving our public transit systems, our pedestrian infrastructure desperately needs improvement and expansion. A lack of investment in pedestrian infrastructure has led to a system that is unsafe; in a study done by law firm Kelley Uustal, Miami Beach and the City of Miami ranked as the first and second most dangerous pedestrian cities in Florida in 2016. Our biking infrastructure struggles from similar dis-investment and safety concerns; Miami is the fourth deadliest city for cyclists.

If we are going to reduce our transit emissions, we need to move towards more environmentally conscious, safe transit methods and ensure that our transit methods take advantage of technologies such as electric power, smart roads, and ride-, bike-, and scooter-sharing services.

Transit Alliance Miami gave Miami’s transit system an average grade of "D".

Punch Line —

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If we are going to reduce our transit emissions, we need to move towards more environmentally conscious, safe transit methods and ensure that our transit methods take advantage of technologies such as electric power, smart roads, and ride-, bike-, and scooter-sharing services.
Many participants suggested that we need to improve our public transit system to create a system that locals want to use, and others suggested that locals need to take the first step to actually use the public transit options we already have:

**17 Use transit.**

— “Drive less - bike more and use transit when you can!” (Aida Membreno-Curtis)

**18 Improve bus facilities:**

— “We need to have better bus facilities. I can’t believe there are not at least rain covers/shade at every stop. Couldn’t we install something like sidewalk umbrellas at bus stops?” (Jessica Rabascall)

In addition to improving and using the transit system we currently have, many participants suggested strategies to improve the energy-efficiency of our transit system:

**19 Adopt electric charging stations for busses:**

— “I would love to consider solar and battery storage for fast charging buses on the route too! It might be a cool way to combine bus shelters with resilience hubs.” (Emily Bliss)

**20 Electrify our trolley systems:**

— “On contract renewal, switch trolleys to electric. Give manufacturers notice so they can prepare. Vehicles that cannot be electrified should run on bio-diesel or E85 fuel.” (Dave Doebler)

In addition to better public transit, we desperately need better biking, walking, and scooter lane options, which both provide an alternative transportation option and provide better pathways to allow people to safely connect to public transit options. Our sidewalks and walking infrastructure are one area for improvement:

**21 Create safe, comprehensive walking infrastructure:**

— “True sustainability begins with connection. Connection to one another, connection to the land, and connection to local issues. My idea: Walk. Walk to your city hall and tell those who ran, for elected positions, that your city needs walking paths, tree canopies for shade, crosswalks at intersections, and sidewalks that connect, you and your family, to schools, parks, libraries, local merchants, and a healthy community.” (Joan Braun)

Our biking infrastructure is also in need of improvement. We know that if improved, locals would choose to bike: a recent study by the Miami Downtown Development Authority (DDA) found that 60 percent of those who live close to downtown Miami and nearly half of those who live 10 miles away say they would bike to work if they had access to the proper facilities and infrastructure.”

Complete Streets are one way to prioritize biking infrastructure. The Downtown Development Authority (DDA) has launched Miami’s first Complete Streets initiative in partnership with the City of Miami, Miami-Dade County, and the Health Foundation of South Florida, which has resulted in the creation of a dedicated bike lane in downtown Miami along SE/SW First Street into a multi-modal corridor. More investments of this kind are needed to create a more connected community.
Participants suggested a few ways to make commuting by bike more comfortable, including:

**Build public bike stations:**

- “What about public bike stations (repair/storage/shower room) placed in a plaza/mini parks at a few select high volume bike commuter locations in town? It would have enough room for at least 2 showers and an attendant to greet people, work, and repair bikes for commuters.” (Ernest Bellamy)

Another way to build walkable neighborhoods is to encourage transit-oriented development, which is a type of community development that includes housing, office, retail and/or other amenities integrated within a walkable neighborhood and located close to public transportation options.

**Incentivize transit-oriented development:**

- “We can incentivize higher density development along transit routes (which implies having ACTUAL TRANSIT) as well as density incentives and adaptive reuse incentives for urban infill. Also, soon we will be able to sacrifice the thousands of acres of paved surface parking lots and garages and convert those parcels for redevelopment - hopefully for affordable, resilient housing.” (Rachel Allison)

For those individuals who still choose to rely on car-based transit, they can also choose to purchase electric vehicles. According to a 2018 report by the European Climate Foundation, “replacing a fossil fuel-powered car with an electric model can halve greenhouse gas emissions over the course of the vehicle’s lifetime.” However, in order to build a community that supports electric vehicles, we must also build a charging infrastructure in our public and private facilities.

**Require electric vehicle charging stations:**

- “Require electric vehicle charging stations in new large developments and parking garages. Add more public charging stations for electric vehicles, with a goal of having 50-100 city-wide” (Dave Doebler)

Another way to reduce transit sector emissions is to reduce the need for shipping:

**Keep production local:**

- “Use digital fabrication labs and advanced manufacturing to create centers of production for each city. Data is transferable globally (design files, products, etc.) - materials and means of production stay locally. This builds the local economy, minimizes carbon impact (due to less shipping) and provides jobs of the future!” (Tom Pupo)


27. Ibid.


Theme III: Water

Our water - both ocean and drinking water - is at risk due to increasingly frequent toxic algae blooms, stormwater runoff, and the intrusion of salt water into our drinking water. We must take urgent strides to protect our water supply to ensure that we continue to have clean water to drink and clean oceans in which fish and other marine life can thrive.

Both our ocean water and our drinking water are at great risk in South Florida due to salt water intrusion as well as more frequent and intense toxic algae blooms. Salt water intrusion is the flow of saltwater into our freshwater aquifers (the permeable rock that contains and transmits groundwater). This can lead to the contamination of our water sources, which results in threatened drinking water and agricultural water supply. The main contributor to saltwater intrusion is the extraction of groundwater, particularly groundwater pumping from coastal freshwater wells, a process which reduces the amount of freshwater and allows for denser saltwater to move inland. Another contributor to salt water intrusion is sea level rise; as our seas rise (they absorb heat from our warming climate and expand, thus rising), they push more intensely into our drinking water, thus contaminating it.

In addition to sea level rise, toxic algae blooms also threaten our clean water supply. We’ve experienced two types of algae blooms in Florida recently; toxic algae blooms in our oceans - which we call “red tide” due to the muddy brown hue that the Karenia brevis algae turns the water - and toxic blue-green algae blooms in Lake Okeechobee. At one point in July 2018, the toxic algae blooms in Lake Okeechobee were reported to cover more than 90 percent of the lake’s surface. Both types of toxic algae blooms are caused primarily by pollution; as fertilizer containing elements like phosphorus and nitrogen flows into our water, it fertilizes the algae and causes it to grow out of control. Warming water, due to our warming climate, also plays a role; the warmer water allows the algae to thrive.

These algae blooms have many negative consequences; they produce dangerous toxins that sicken or kill people and animals, create “dead zones” in water that lack the oxygen marine animals needs to survive, raise treatment costs for drinking water, and hurt industries that depend on clean water. The recent “red tide” algae blooms were also harmful to our economy; each year, red tide creates $82 million in economic losses to the seafood, restaurant, and tourism industries in the U.S. We must get a handle both on fertilizer runoff and the warming of our waters in order to curb the harmful effects of future toxic algae blooms.
We must build both the infrastructure and policies we need to protect our waters from dangerous pollutants like sugar (which causes toxic algae blooms), stormwater (which often brings pollutants like motor oil from land into the water), and waste from nuclear facilities. Protecting our waters was one of the most popular ideas:

**Protect our waters:**

- “Our state must protect our waters. The results are all over the news: pollution in Lake Okeechobee, drinking water with cancer causing compounds in satellite beach area, people coughing on beaches from toxic green algae and red tide, salt water intrusion at Turkey Point, storing radioactive waste under our aquifer, etc, etc.”
  (Mandy Bartle Spangler)

- “In South Florida, the biscayne aquifer is also our only source of potable drinking water. Protecting the quality of the freshwater within it is critical.”
  (Matt Haber)

As water from storms hits our paved streets, this “stormwater runoff” tends to pick up different pollutants - such as sediment, nitrogen, phosphorus, bacteria, oil and grease, trash, pesticides, and metals - that then find their way into our water supply. To purify water, participants suggested we should:

**Create sponge parks:**

- “Land acquisition by parks of evacuated lands - along coast and canals - acts as ‘sponge parks’ for communities.”
  (Rachel Kardys)

Sponge parks are open space systems that slow, absorb, and filter surface runoff to help clean contaminated water and active the waterfront. They can also serve to revitalize neighborhoods.

**Install rain gardens:**

- “Rain gardens are an easy way to return water to our aquifer, reduce erosion, and help prevent stormwater runoff. Running down the driveway or patio, rainwater can pick up lawn chemicals and pesticides. A rain garden is basically a low section of the landscape planted with native plants that like to get their ‘feet’ wet. The garden collects rainwater, giving it a chance to ‘strain’ out impurities before draining into the aquifer.”
  (Elisa Juarez)

**Create bioswales:**

- “Creating ‘bioswales’ that can hold water so the ground can absorb it and recharge the aquifer is a minimum standard. Turning them into micro-wetlands is much better. You could plant them with bald cypress, sawgrass, willows…”
  (Sam Van Leer)

More specifically, a bioswale is a low-lying area or trough that uses plant materials and specialized soil mixes to treat, absorb, and convey stormwater runoff. They may also create habitats for birds, butterflies, and local wildlife. Bioswales differ from rain gardens in that they are designed to manage a specific amount of runoff.
To protect our drinking water from the intrusion of saltwater, we could:

30. Create a Waterway Lock System:
   - “Create a Waterway Lock System (in waterways with boat traffic) near the Bay. They would keep the salt water out, especially during high tides, and keep the surface salt water pressure from reaching deep inland (like Gables Waterways or Snapper Creek Canal). This would also eliminate the need for toxic anti-fouling paint, since barnacles can’t grow in fresh water, saving money and eliminating a cause of pollution. Locks would open when boats need to transit through.” (Sam Van Leer)

We could also expand our supply of fresh water by finding better ways to harness water in our atmosphere and rainwater:

31. Collect rainwater:
   - “We need to move to a system of on-site/on-demand water collective and storage. Atmospheric Water Generators and rain collection systems are the most feasible and reliable forms of water security. Sitting these systems on top of tall buildings and letting gravity do the work would be best. Treated wastewater should be recovered and reused for cleaning purposes.” (Sean O’Hanlon)

Another way to protect our clean water supply is to find ways to use less water:

32. Reduce your personal water use:
   - “Implement a smart sprinkler policy.” (Alissa Farina)
   - “Buy and install a low-flow toilet.” (FL SUN)

33. Target the biggest water wasters:
   - “All of the South Florida utilities should leverage their data on property usage to target the biggest water wasters and incentivize them to save. This could be achieved by installing free fixtures like Denver, or offering bill discounts if they achieve certain savings targets.” (Richard Lamondin Jr.)

34. Revise golf course use permits:
   - “Conserving water is always a good idea, but it is important that the onus is not just on individuals. There are several private golf courses with use permits that allow them to draw 1,000,000 gallons per day.” (Sam Van Leer)

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Theme IV:

Land Use

We must make better use of our land to ensure that we're planting and protecting the trees and plants that absorb carbon dioxide as well as planning for our rising seas.

We must modify the way we use our land to mitigate and adapt to climate change. A lack of protection for wetlands and destruction of forests are both contributors to our global sustainability crisis. Even though they cover only six percent of our land, it is estimated that forests and other land vegetation produce 40 percent of the earth’s oxygen and remove up to 30 percent of human carbon dioxide emissions from the atmosphere. Yet unfortunately, we’re losing our forests at unprecedented rates; each year, 18.7 million acres of forests are lost due to deforestation - which is equivalent to 27 soccer fields every minute. This is happening in our own backyard - the Everglades has shrunk to one-third of its original size due to human intrusion, from 3 million acres in 1947 to 1 million acres today. Without these valuable wetlands, forests, and land vegetation, we put ourselves at additional risk for a rapidly warming climate and all the negative impacts that result.

We also need to plan land use strategies in response to our rising seas or we will be unprepared for the consequences when they arrive. Sea level rise occurs when ocean water warms, expands, and melts land ice (ice sheets and glaciers). Sea levels along the Florida coast are predicted to rise 16-80 inches over the next 50-100 years which is expected to result in property destruction, salt water intrusion, and erosion. Current projections put between $15 billion and $23 billion of existing Florida property underwater by 2050 and half of the 825 miles of beaches monitored by the state’s Department of Environmental Protection are designated as critically eroding. We must be proactive in anticipating these rising seas to ensure that we have strategies in place to minimize the negative impacts.

Additionally, because Florida sits on a porous plateau of limestone, sea level rise also comes from below. When water levels rise, water rises through the ground, which leads to flooding and causes private septic tanks, which are not connected to public sewer lines, to break down. When this happens, these septic tanks cannot filter and clean the human waste that goes into them and as a result, this human waste flows into the streets and into the aquifers where we get our drinking water. Currently, there are 90,000 private septic tanks in Miami-Dade County that are at risk of flooding unless we quickly identify solutions to mitigate this risk.
To ensure that we have the plants we need to filter carbon dioxide and produce oxygen, participants suggested that we must prioritize planting new vegetation in addition to protecting the trees and flora we already have:

**Plant native:**
- “Plant natives such as gumbo limbo, green buttonwood, paradise trees, and wild tamarinds.” (Aida Membreno-Curtis)

**Protect the trees we have:**
- “We need to urge leadership to protect existing trees against continued development and plant trees (not palms) all over to create natural green canopies that lead to cooler temps. We need to develop a required ratio of green space and parks to hard brick development. It pains me that every open green plot of land needs to be sliced open and filled with concrete.” (Webber J. Charles)
- We should have steeper penalties for not protecting our tree canopy.” (Aida Membreno-Curtis)

**Plant green roofs:**
- “I often go to the roof of The Colony Theatre on Miami Beach, and from there Lincoln Road looks like a collection of enormous flat roofs. We could be doing so much more with those prime empty spaces: Either transform those roofs to green roofs or green gardens (both have great sustainability benefits) or fill them with solar panels - after all, we are the sunshine state.” (Michel Haussman)

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**Replace lawns with plants:**
- “Replace your lawn with shrubbery and gardens. Plants absorb water as well as dampen noise.” (Gary Gromet)

**Give out trees:**
- “The county does tree giveaways, but often the dates and locations don’t work for everyone. Are there more ways to get trees into the hands of residents? Maybe organizations like Uurban Paradise Guild (UPG) working with neighborhood associations to organize a tree planting drive in different areas could help?” (Engage Miami)

**Build vertical gardens along highways:**
- Dream in Green shared that Mexico City has converted columns along its busiest highways into more than 600,000 square feet of vertical gardens, which combat pollution. Learn more at: bit.ly/VerticalGardensMC (Dream in Green)

**Require zero deforestation standards:**
- “Local governments and businesses could also require that their procurements meet zero deforestation standards. It sounds a little underwhelming but deforestation (globally) accounts for about 15% of greenhouse gas emissions and removing it from our supply chains would be impactful.” (Matt Haber)

One ongoing local effort to plant trees is the Million Trees Miami campaign, a community-wide effort launched in 2011 to plant 1 million trees to achieve a 30 percent tree canopy cover for Miami-Dade County.
Preparing comprehensively and collectively for sea level rise was a popular suggestion during the campaign:

_create a comprehensive Sea Level Rise Master Plan:

— “Miami-Dade County needs a COMPREHENSIVE MASTER PLAN TO COMBAT SEA LEVEL RISE that brings together various departments (public works, zoning, transportation, parks, etc.). Currently, these departments do not work together on this issue and do not coordinate well with things like municipal zoning, FDOT maintained roads, etc. In order to save the future of our city, we need to be thinking long-term together.” (Shaan Patel)

Participants suggested many specific strategies to adapt to the effects of sea level rise (many of which could be included in a master plan):

Plant mangroves and restore coral reefs:

— “We are all about natural solutions for climate change. Protection and restoration of coral reefs and mangroves help protect coasts from rising flood waters and storms. We have identified more than a dozen potential locations in Miami-Dade County in which natural and hybrid infrastructure could increase resilience to storms and rising sea levels. Read more at bit.ly/ChubbMiamiPartnership.” (The Nature Conservancy)

— “Restoring mangroves and coral reefs protect vulnerable coastlines and protecting sea grass populations improve water quality. The U.S. Governmental Accountability Office (GAO) estimates that every dollar spent by FEMA on mitigation saves four dollars in future efforts.” (Matt Haber)

Implement a housing vulnerability analysis:

— “The county should implement a housing vulnerability analysis using baseline SLR data projections (the Southeast Florida Climate Change Compact projections would be useful here) to evaluate neighborhood vulnerability not just for roadway flooding, but property flooding and rising insurance costs as well. This way, we can determine which communities need to be prioritized for adaptation and mitigation and we can begin to craft a plan for addressing it. Those communities that have lower tax bases and higher density should be prioritized for public investment and grant opportunities.” (Rachel Allison)

Make flood plain ordinanes more stringent:

— “It’s not sexy, but cities/counties should make their flood plan ordinances more stringent by elevating base flood elevations, requiring the construction of buildings that are more resilient to water intrusion, and incentivizing water recapture techniques. In a place like Miami, sea level rise affects, not only coastal communities, but in land properties as well. Salt water intrusion into our aquifer reduces water recharge capacity and increases hydrostatic pressure, resulting in increased flooding everywhere. Working on flood plain management makes for good building policies and works to protect our properties and insurance rates.” (Dan Espino)
Mandate disclosure of flood risk information:
— “I think it would be great if flood insurance payments and repetitive flood loss information were mandatory information to disclose when purchasing a home.” (Alissa Farina)

Install permeable pavements:
— “Increase permeable soft-scape surface requirements in building codes.” (Benji Power)

In order to avoid the potential catastrophe of flooded private septic tanks, participants suggested many options:

Extend public sewer lines:
— “The West Augustine Community Redevelopment Agency (CRA) recently committed tax increment financing (TIF) funds to extend sewer lines to properties with in-ground septic systems. Miami-Dade has 90,000 homes on septic that are at growing risk of being overwhelmed by a rising water table and more intense flooding and storms. Local CRAs could use TIF resources for similar infrastructure improvements that reduce vulnerability and build adaptive capacity.” (Jorge Damian de la Paz)

Create a sewer system design challenge:
— “Also, maybe we can host a design challenge [for above-ground septic systems that meet Miami wind code]? Offering homeowners a tax break on installation could also spur adoption and would go a long way towards reducing the estimated 2+ billion dollar price tag of connecting folks to sewer. Also a jobs opportunity.” (Mario Alejandro Ariza)

Build above ground septic systems:
— “I’d love to see neighborhoods/groups of home owners consider new technology coming out for above ground septic systems powered by solar (and other clean energy sources) for the parts of our city that are not connected to our sewer system. Units can serve groups of homes/streets to bring down costs. As the water table rises, contamination of ground water from the many homes in Miami that are offline will be a serious issue. I’d like to be able to say that these home will be connected to the sewer system thereby "solving" the problem but as we all know the $ likely isn’t there so this will have to be taken on by a combination of advocacy, citizens with creative solutions and the help of science.” (Frances Colon)
Theme V:
Food Systems

Over a third of all food produced globally goes to waste. To both curb our emissions related to food production and cut our food waste, we must consider strategies related to changing our diets and establishing more effective food systems.

The food systems that we have grown accustomed to in South Florida, as well as all around our country, which include significant meat consumption, excessive food waste, and constant demand for non-local products, contribute significantly to our climate change crisis. Livestock farming is particularly harmful; it accounts for almost 15 percent of human-produced greenhouse gas emissions globally. The greenhouse gas emitted by livestock - methane - is produced when livestock burp and is 28-36 times better at trapping heat than carbon dioxide.

Food waste also contributes significantly to our growing climate change crisis: over a third of all food produced globally goes to waste, whether due to spoilage during harvesting or transport or because grocery stores or individuals throw out food when it is in part or fully spoiled. About 95 percent of that wasted food ends up in landfills, where without access to oxygen, the decay process emits the potent greenhouse gas methane. A better option is composting food waste which produces fewer emissions as it decays and is thus better for the environment. However, limited opportunities for composting (both locally and nationally), as well as a lack of awareness of the benefits of composting, limits its use.

South Floridians have also become accustomed to grocery stores stocked with fruits and vegetables from around the world. As stated by New York Times reporter Elisabeth Rosenthal, “consumers in not only the richest nations but, increasingly, the developing world, expect food whenever they crave it, with no concession to season or geography.” Unfortunately for our planet, transportation of these agricultural products is emissions intensive due to both the fuel used to transport the products and to the coolants that are needed to keep the goods cool and fresh on the journey. To reduce our food related emissions, we must reflect both on our consumption patterns and the choices we make regarding food disposal.

The United States wastes more than $160 billion in food a year.
To reduce the extreme and negative impacts of livestock grazing, feeding, and burping, individuals can curb their consumption habits:

**Reduce or eliminate meat consumption:**
— “Reducing or eliminating our consumption of animals is something we all can do right away and that has a huge impact on greenhouse gases.” (Alexander Ruiz)

**Commit to "Meatless Mondays":**
— “Several large cities have implemented Meatless Mondays (South Miami, LA, DC, San Fran). Lowering meat consumption (and dairy, but one thing at a time) is the single action someone can do to drastically lower their footprint. Thus far Meatless Mondays endorsements are pretty symbolic in nature but if there were a way to implement a reward system for engaging in MM we could see increased participation.” (Monica Skoko Rodriguez)

To cut back on our transportation emissions related to transporting food in from other regions, we can focus on growing food locally:

**Plant edible fruit trees:**
— “We should plant edible fruit trees since we have such a wonderful climate for mangos, bananas, papaya, avocado, starfruit, lychees, etc. and this would reduce the distance our food has to travel.” (Nicholas Borja)
— “Plant fruit trees in common spaces for free fruit.” (Dave Doebler)

**Grow food where you live:**
— “Incentivize and educate the public on growing food where they live.” (Caroline Chandrakaur Williams)
— “Food insecurity among youth and adult onset critical illness are strongly intertwined. We need to see more community garden programs that teach children and their families about where food comes from and gives them a local place to access these foods. It would be nice if more of the farmer’s market coops set up shop in these high need areas once a week so that those residents had access to healthy foods. The community center in Brownsville would be a great place to start as there is already an infrastructure set up with land available for cultivating goods.” (Sonia V. Diaz)

Composting was another strategy that participants suggested to make better use of food waste and lower emissions related to food decomposition:

**Introduce municipal composting:**
— “YES to composting, I challenge the county/municipalities to start providing weekly compost pickup!” (Natalie Castellanos)
— “Miami-Dade had a huge composting program many decades ago, but it was plagued with problems, including the outsized impact it was having on communities of color, and was shuttered. That bad experience has made it really tough to approach but I’d like to see how we can get the County to integrate composting again in our solid waste management plan.” (Daniella Levine Cava)
Add more composting sites:

— “Currently there are only three official compost locations in Miami and we need more to make it easier and more convenient for residents. So far I only know of the Miami Beach Botanical Garden, Smart Bites To Go and Earth and Us Farms.” (Jeannette Ruiz)

— “Could nurseries or parks have drop offs for compost that can then convert into soil?” (Engage Miami)

— “Gainesville Compost a pedal-powered compost pickup program. They work with restaurants to pick-up food scraps and compost them for them. What if we piloted something similar in the urban core?” (Alissa Farina)

Incentivize composting:

— “Encourage/require composting and limiting waste by offering discounts and incentives via a zero waste implementation plan (ZWIP) as modeled by City of Alameda, CA.” More details: bit.ly/Alameda_0Waste (Dawn Shirreffs)

We can also ensure that food does not get wasted by promoting redistribution. Participants suggested that our community can:

Create an app to redistribute food to those in need:

— “The company GoodrCo has an app that allows restaurants in the Atlanta area to contact them with leftover food which they collect and deliver to people in need. It would be great to have something similar in Miami!” (Katherine Leiva)

Require unused food donation:

— “Restaurants and any larger scale operations should be required to have a system they present when they open where by they compost food scraps and donate excess unused/good quality food and fines are levied for non-compliance.” (Monica Skoko Rodriguez)

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Theme VI: Refuse, Reduce, Reuse, Recycle

We use way too much plastic. Plastic production emits significant amounts of carbon dioxide which contributes to climate change and throwing away plastics at the end of their life-cycle creates significant waste management and marine debris problems. Recycling should be a last resort; instead, individuals and businesses should focus efforts to refuse, reduce, and reuse plastic products.

Our modern-day reliance on single-use plastics and other disposable materials is both a driving force behind our changing climate and a major pollutant of our planet. We produce an estimated 335 million tons of plastic each year, with roughly half of annual plastic production destined for a single-use product. The production process is extremely energy intensive; the burning of petroleum fuel to produce plastic emits 300-500 million tons of carbon dioxide (CO₂) annually. All in all, plastic manufacturing is estimated to use 8 percent of yearly oil production. Therefore, without a market in which to sell recyclable goods, many waste management systems are simply adding your carefully sorted recycling to the general waste pile, where it either gets buried or burned.

One mentality is that you can purchase and use plastic products as long as you recycle them when you’re done with them. However, while recycling was once elevated as one solution to our growing waste problem, the market for recycled goods is no longer what it once was. Unfortunately, we do not have a strong domestic market for recycled materials and the U.S.’s former biggest customer for recyclable materials, China, is no longer purchasing our recyclables because we both produce too much recycling and our recycling loads are contaminated with food waste and non-recyclable materials. As of 2018, China will only purchase recycled materials that are less than 0.5 percent contaminated, and waste management in Miami-Dade County receives material at 25 percent contamination. Therefore, without a market in which to sell recyclable goods, many waste management systems are simply adding your carefully sorted recycling to the general waste pile, where it either gets buried or burned.

Another concern regarding our reliance on plastics is that much of our plastic waste is not properly disposed of and ends up in our oceans. Plastics have been around for roughly 70 years, and every single piece of plastic (unless it was burned) still exists on the planet today in one form or another. A 2015 study revealed that 8 million tons of plastic waste flows into our oceans each year, which is enough to cover every foot of coastline in the world. Furthermore, we know that there are over 100 species of human-consumed fish that ingest the 15-50 million pieces of microplastic that is estimated to be in the ocean. Other marine life is impacted as well; scientists estimate that ocean plastic kills millions of marine animals every year. Identifying strategies to curb our plastic use will result not only in less emissions but also will benefit our oceans and marine life and improve the quality of our food.
Individuals can make behavioral changes to reduce their consumption of disposable goods.

**Utilize re-usable materials:**

- “Carry a refillable water bottle and drink water instead of purchasing packaged drinks. Carry a travel coffee mug to the coffee shop to avoid single use cups and lids.” (Lisa Beth Merkle)
- “Rinse and reuse Ziplock bags.” (Lisa Beth Merkle)
- “Sara Yousuf and I brought in reusable utensils to our respective workplaces. So many people were on board to end the use of plastic.” (Gabriela Barrocas)
- “Use old cloth towels instead of paper towels.” (Gary Gromet)
- “I gift a used/new reusable shopping bag to the next person in line at Publix, to encourage and inspire others to do the same and use less plastic.” (Ceci Be)

Beyond individual behavioral change, many participants suggested that the government ban the sale and/or use of single-use materials such as straws and plastic-wares:

**Ban more than straws:**

- “While eliminating plastic straws is a good entry point for many businesses, we have to keep in mind that it cannot stop there - it must extend to the elimination of all single-use plastics and beyond.” (Rebecca Willett)

Certainly, a single-use plastics ban would effectively reduce the consumption of these materials. However, it is worthwhile to note that while some local governments have enacted bans on these materials (e.g. the polystyrene (commonly known as styrofoam) ban in Miami Beach and Coral Gables and the plastic straw ban in Pinecrest), the State of Florida has quickly enacted pre-emption laws that prohibit local governments from creating local bans, fines, or rules that are stricter than existing state requirements. As a result, many local governments are facing legal challenges regarding their local bans; for example, Coral Gables was sued by the Florida Retail Federation and SuperProgresso after they enacted their polystyrene ban in 2017. For more information on pre-emption laws, visit: bit.ly/FLpreempt.

Incentives and campaigns can be an effective method for swaying both business and consumer behavior. Businesses can also reduce their use of single-use plastics by changing their purchasing patterns or staff behavior:

**Ask customers "Do you want a bag?:"**

- “At the very least, [cashiers should] ask first - do you want a bag? It should be a requirement for every retailer to ask - not just assume - that a candy bar needs a bag that could hold groceries!” (Judith Sprindel Briggs)

**Encourage businesses to use reusable materials:**

- “I own a company that tries to get restaurants, bars, and others to switch over to metal straws. We have approached them with the ‘let’s take one drink and make it specifically eco-friendly’ to appeal to a growing market. It’s a slow process. Businesses need to be incentivized and shown how they can benefit.” (Jay Jackson)
**64** Reward the switch to compostable/marine degradable products:

— “How about either requiring or rewarding businesses, particularly in the food industry, who switch to fully biodegradable packaging, cutlery, plates, etc. like those provided by Lean Orb. leanorb.com” (Vivian Belzaguy)

**65** Start a “No Straw Challenge”:

— “What if we started a ‘no straw challenge’ and got a number of bars and restaurants to make a similar commitment? Not only is it a sustainable move, but there’s also an incentive of positive branding for these establishments.” (Arohi Bhatt)

Relatedly, a few participants noted the #PlasticFreeMiamiBeach campaign that showcases businesses that have reduced plastic use in their establishments. Certainly, similar campaigns could be launched in other municipalities.

Once you’ve determined that a product can no longer be reused, it’s time to consider recycling it. Unfortunately, recycling can sometimes be a confusing endeavor. One way to clarify what can be recycled would be to:

**66** Create a “how to recycle” guide:

— “Can someone create or share on a wide scale a simple and uniform ‘how to recycle’ guide? Even people who want to do the right thing sometimes struggle to understand what to recycle where (ok, ‘people’ might mean me). If there was a community wide campaign (with lots of infographics and/or emojis) that told folks how to do recycling right, I think we’d all benefit (and finally know what to do with empty milk cartons).” (Javier Soto)

To inspire more reuse and recycling, local governments could incentivize these habits by building in relevant infrastructure and policy:

**67** Upgrade to water bottle refill stations:

— “When renovating public spaces (parks, schools, buildings), water foundations should be converted from standard bubblers to units with water bottle refill stations and maybe doggie bowls.” (Dave Doebler)

**68** Add more recycling bins:

— “I am continuously shocked and disappointed at the lack of recycling infrastructure and recycling culture in Miami. This is really low hanging fruit. Mandating a recycling option next to every trash can feels pretty doable.” (Chris Caines)

**69** Require sustainability plans for large events:

— “Miami is home to thousands of events throughout the year... many of them exceeding 20K in attendance, some more than 100K! These events create more trash in a few hours than some of us create in our lifetimes. I think these large events, especially those that happen annually, should be mandated to present a sustainability plan within their city permitting process. They can be given free resources to assist with this such as a guide to sustainable events and a list of local supporters such as certified sustainability consultants, non-profit organizations and down-cycling/ recycling partners.” (Vivian Belzaguy)
Limit household trash:
— “A big step would be getting people to make less trash and reducing food waste. We could initially limit the amount of trash households are allowed to have picked up and anything over that generates a fee.”
(Monica Skoko Rodriguez)

Bring plastic banks to South Florida:
— “What’s the incentive for people to clean up, if they don’t think a polluted environment affects them? Plastic Bank pays the ultra poor for bringing plastic to their recycling huts. They create an online bank account for each person so their money is safe and can begin to use that value to establish better personal security.”
(Jacob Werbin)

Another challenge we face in South Florida is debris and plastics making their way into our waterways. In order to ensure that we maintain clean waterways, we could:

Bring a trash wheel to the Miami river:
— “Let’s keep our Miami river clean! I love how Baltimore took a trash barge and made it into a tool for educating the city about the river system with Mr. Trash Wheel! This Baltimore icon not only cleans the harbor, but engages citizens on sustainable living in an urban space.”
(Elisa Juarez)

Limit trash and debris in storm drain systems:
— “Establish a voluntary total maximum daily load (TMDL) for plastic trash and debris through the storm drain systems.”
(Dave Doebler)
Our environmental challenges require bold leadership from both elected leaders and locals. We must invest in community and government leadership and education in order to elevate and implement impactful solutions.

Only 45 percent of Americans think that global warming will pose a serious threat in their lifetime. We need locals to be engaged in leading the charge for a more resilient and sustainable region. One area of opportunity is educating locals on how climate change impacts them, as it can feel like an existential threat with few real time impacts; in fact, only 45 percent of Americans think that global warming will pose a serious threat in their lifetime and just 43 percent say they worry a great deal about climate change. As a result, many locals do not take sufficient action to advocate for adaptation and mitigation solutions. To change this, we must identify ways to inform individuals about how climate change will impact them and present opportunities to become engaged in advocating for climate action.

We also need governmental leadership to ensure that we’re both effectively mitigating our emissions to slow down the rate of climate change and to implement strategies to adapt to our rapidly changing climate. Historically, Florida has had few leaders who prioritize environmental protection and climate action. As a result, few policies or resolutions related to climate change are proposed and implemented.

One area where we’ve lacked leadership at both a national and local level is in pricing climate impacts into the cost of fossil fuels. Without pricing the impacts of climate change (rising temperatures, more frequent extreme weather events, etc.) into the price of fossil fuels, we the people - rather than those contributing most to climate change - will pay for the tremendous costs associated with these impacts.
Top Solutions

Participants suggested many ways that community members can provide climate education and advocacy opportunities to educate and activate locals around climate change issues:

74  Deliver public education through billboards and TV:
   — “I think billboards in well-thought out areas and advertising on public TV are a big opportunity for public education...If we could have more information about recycling, electronic waste disposal, community cleanup events, clean energy on individual and community levels, public transportation, parks, local businesses, issue profiles, etc. it might be reaching a new demographic.” (Jessica Rabascall)

75  Provide climate education and advocacy opportunities through Houses of Worship:
   — “How about protecting our environment through our Houses of worship. HOWs can have a deep influence on their congregations and their surrounding communities. For instance, my HOW, Miami Friends (Quakers) Meeting uses green practices such as recycling, using cloth napkins and we use green cleaning products. We also hosted many presentations on environmental issues.” (Brian Olson)

76  Invest in climate education:
   — “I think the county should offer/ fund more education when it comes to resiliency. Bring in experts who can share their knowledge with municipalities, landscapers, contractors, developers. And perhaps a special program for teachers at schools who can become school experts and pass on to their students.” (Charles Walter)

77  Educate elected leaders on climate change impacts:
   — “I think city staff, especially electeds, need to have training on climate change issues. A workshop for electeds with other electeds? And an online webinar or something as part of new staff onboarding for employees.” (Alissa Farina)

78  Develop more community-based learning opportunities:
   — “We would love to see support for community-based learning, in which curricular content is applied to real world problems and solutions, rather than teaching to the test and assessment-first learning. Would love to learn more about how community-based organizations can become ‘learning partners’ with the public school system in taking the curriculum from the class to the city!” (Engage Miami)

Relatedly, in 2018, the Florida Climate Pledge launched a billboard campaign to help Floridians connect the dots between climate change and their concerns related to the economy, health, and displacement. Learn more at: bit.ly/climatebillboards
Vote with your wallet:
— “Another really EASY way is to vote with your dollar and support businesses that are sustainable such as B-Corporations (https://bcorporation.net/) or local Conscious businesses.” (Sirena Smile Andras)

Create a climate resilience and community asset map:
— “A simple consistent Climate Resilience & Sustainability Community Asset Map from the State and local governments, listing all local stakeholders’ names and contact info that pertain to the different issues would be a great asset to influential community members who can give a project or idea legitimacy or momentum. The CAM can take the, at times, exhausting guesswork out of where to start, who to contact and how to implement, etc.” (Julia Brazell Cespedes)

Get climate advocates to run for office:
— “Vote (and get out the vote) for candidates who will hold polluters accountable.” (Sam Van Leer)

Profile elected leaders and hold them accountable:
— “Residents could more easily hold their local representatives accountable if they had easy access to their voting records and trends. Resiliency and sustainability impacts a range of issues (from transit to clean water). It’s difficult for residents to monitor all those decisions at the city and county levels. Online profiles of commissioners/council members that display support for resilient and sustainable proposals would make this civic task much easier.” (Matt Haber & Jorge Damian de la Paz)

Participants also suggested many calls to action for our elected and government leaders:

Track climate change costs:
— “Local governments must track the costs that climate change is foisting on us. Miami Beach is spending $600+ million on pumps and raising roads. City of Miami committed $192 million so far for seawalls and other impacts. What are local officials saying about this? Ask the question - should you pay or those responsible?” (Susan Glickman)

— “At present, Miami’s taxpayers are on the hook for 100% of the costs of planning for and adapting to climate change. Yet we have no real sense of how large the toll will be, as Miami still does not account for these costs. Miamians have a right to know how much they have paid and will continue to pay to keep their homes and infrastructure safe. We must demand a full accounting of past, present and future climate resiliency and mitigation costs and that these numbers are made routinely available to Miami voters.” (David McDougal)
Publish open-source municipal data:
— “I’m thinking about how so many of our ideas are based on anecdotal information — which I don’t doubt to be true, but in many cases we don’t know the full extent of the issue because we don’t know exactly where/how often it’s happening. For that, we need open-source municipal/county data.” (Rebecca Willett)

Share progress towards sustainability goals:
— “I’d want to look at our city’s sustainability plan and look at progress against goals. Where are we struggling and why?” (Wendi Adelson)

Put a price on carbon:
— “Address the global climate crisis with the only at-scale policy response that unleashes ALL solutions. We need to all line up behind driving legislation to put an honest price on carbon. While Miami of all places should be leading on this, we’re not. Let’s get behind this before it’s too late. Put A Price On It.” (Greg Hamra)

Other sectors and industries can also be a part of the climate change conversation:

Have health professionals discuss climate change impacts with patients:
— “Maybe we should add in information [about climate change] during annual checkups! Especially for people with pre-existing conditions. To hear a trusted health professional such as a doctor discuss these things would definitely provide a level of trust and vulnerability that many people need when diving into this topic!” (Katherine Leiva)

Provide opportunities to offset emissions:
— “Give people an easy way to manage their lifestyle and consumer carbon footprint. If Uber allowed an eco-ride option where you could offset the CO2 emissions of your trip then I think a lot of people would pay a few cents extra to do that. Likewise if online retailers (hint Amazon prime) gave people the option to be climate friendly by offsetting the shipping and packaging emissions of their purchases imagine the kind of climate projects we could support!” (Jesse Uzzell)

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72 Ibid.
Theme VIII: Resilient Communities

Our most disadvantaged communities are most at risk due to the impacts of climate change - from extreme weather events to extreme heat to climate gentrification. We must invest in building resilient communities to ensure that all Miami residents are poised to absorb and rebound from the shocks of both expected and unexpected events and social changes.

Community resilience refers to the capacity of individuals, communities, institutions, businesses, and systems within a region to survive, adapt, and grow no matter the challenges they experience. In Miami, our communities must be resilient to a changing climate that poses many expected and unexpected challenges - extreme heat, extreme weather events, climate gentrification, and more.

Climate gentrification is, according to Miami climate activist Valencia Gunder, “the trend when climate change and/or sea level rise causes the increase of the market value of property and the displacement of lower-income families and businesses in urban neighborhoods.”

Empirical evidence suggests that climate gentrification is already happening: Miami-Dade County properties that are 2-4 meters above sea level have had slightly higher rates of appreciation than those properties 0-2 meters above sea level. In order to protect historically marginalized and high-lying communities in Miami like Little Haiti, Little Havana, and Overtown, we must consider strategies to protect the ability of current residents to afford living in these communities.

Another aspect of community resilience is ensuring that communities are set to handle extreme heat and extreme weather events. Extreme heat is occurring more frequently than it did 60 years ago—and scientists expect heat waves to become more frequent and severe as global warming intensifies. This increase in heat waves creates serious health risks and can lead to heat exhaustion, heat stroke, aggravated existing medical conditions, and can even slow your cognitive abilities. The heat also expands the habitat of mosquitoes, which leads to greater risk of insect borne diseases; Miami's mosquito season has grown to 337 days a year.

Additionally, scientists predict that hurricanes will become wetter and more intense due to warming seas. In 2017, Hurricanes Irma and Harvey, two of the strongest and most costly storms in Florida's history, had a combined total losses of $200 billion. We can already predict future severe economic impacts; Florida ranks second in the nation with $3.2 trillion of insured U.S. coastal properties at-risk to hurricanes. In addition, Florida has already seen an increasing amount of other extreme weather events: in 2011 alone, Florida broke 34 heat records, 27 rainfall records, and experienced cases of extreme drought in multiple counties.
In order to prevent the impacts of climate gentrification, participants suggested many strategies for preserving the affordability of housing in rapidly gentrifying regions.

**Top Solutions**

- **Permanently preserve affordable housing:**
  
  "As we think about the future and climate gentrification, we need to work now for mixed income communities in the neighborhoods on higher ground. That means we need to PERMANENTLY PRESERVE housing that is affordable to those earning lower wages. How to do that? Long affordability covenants on redevelopment and, best of all, community land trusts." (Annie Lord)

  "The City and the County can act to protect public vacant land in Little Haiti, Liberty City, Overtown and Little Havana by placing them into a land bank or a Community Land Trust, thus making sure people continue to have affordable places to live. In neighborhoods that have greater public land scarcity, coordinated action between code enforcement, the City Attorney and people powered affordable housing developers can turn slum and blighted properties into housing made affordable through full land subsidy." (Adrian Madriz)

- **Prevent displacement due to climate gentrification:**
  
  "We need special protections for communities (particularly renters and small businesses) living in highground neighborhoods (Little Haiti, Liberty City, etc.) to prevent displacement due to climate gentrification." (Alana Greer)

- **Explore vacancy taxes:**
  
  "A tax on vacant property is a tool that some other places use to generate additional revenues. In Vancouver, for example, an Empty Homes Tax helps provide funding for additional affordable housing. The theory behind a vacancy tax is to create an incentive to rent out property rather than sit on it for speculation. Opponents argue that it would be very bad for the real estate market and deter investment.” (Leah Weston)

  The extreme heat associated with climate change is extraordinarily detrimental to the human condition and most significantly impacts our most vulnerable communities. Participants suggested a variety of strategies to help communities deal with extreme heat:

  - **Paint roofs and roads white to reflect heat:**
    
    "[My students] think we should hop on the LA bandwagon and start painting streets and roofs white." (Katherine Leiva)

  - **Provide air conditioning in all public housing:**
    
    "I believe it’s time that our cities and County require working wall-mounted AC units in all public housing and rental units. And I join the growing number of people and groups demanding this critical solution to our growing climate crisis.” (David McDougal)
Our most disadvantaged communities are those most vulnerable to extreme weather events like hurricanes. We must think pro-actively about the resilience infrastructures we can put in place to ensure all locals can bounce back after these events. Participants suggested a few ideas that would increase community resilience:

**Provide cooling shelters:**
— “The heat is not helping people with pre-existing conditions in low income households because electricity is so expensive. I like the idea of cooling shelters! Especially for kids at home in the summer.” *(Katherine Leiva)*

**Build community resilience amenities:**
— “I’d love to see pocket parks/community solar stations in every neighborhood with community building amenities including playgrounds, basketball courts, native habitat, community gardens, composting, and perhaps a small community center or meeting space. Importantly, these public spaces would also pack as much solar in as possible, perhaps allowing a neighborhood renters co-op (who can’t put solar on their own roofs) to tap in and providing a source of energy and community during hurricanes.” *(Rebecca Pelham)*

**Build emergency operations centers:**
— “After hurricanes, your neighbors are supposed to be your first responders, helping you get through the first 72 hours. As we saw in Irma, so many neighborhoods weren’t ready. Thankfully Valencia Gunder received a grant to build a Community Emergency Operations Center, to formalize the work she and others did after Irma providing emergency relief. I’d love to see this model spread even further with county and other funding, so that community spaces - churches, synagogues, schools, etc. - around Miami-Dade become resiliency hubs, where people can go after emergencies to access supplies, food, a kitchen with a generator, etc.” *(Marika Lynch)*

**Move to a distributed model of microgrids:**
— “We must move away from the centralized and vertically integrated energy paradigm to a distributed model of MicroGrids that networks various Solar, Wind, Hydroelectric (Tidal & Wave energy), Geothermal, and Bioenergy (biomass/biogas) together. We dodged a bullet from Irma last year. Our luck isn’t going to hold out forever.” *(Sean O’Hanlon)*

Microgrids, as Sean O’Hanlon discussed above, are local energy grids - powered by distributed generators, batteries, and/or renewable resources like solar - that can disconnect from the traditional grid and operate autonomously. Microgrid systems can be especially helpful in times of crisis such as when we are experiencing strong storms and power outages and would allow locals access to a power source during emergencies.
Another way to build community resilience is to invest in adaptation solutions that would allow our communities to thrive.

Launch an incubator to invest in adaptation technologies:

— “Total world spending on resilience and adaptation to climate change currently stands at .38% of global GDP. That number is only going to up along with the temperature. From 2008 to 2015, adaptation and resilience spending in the 10 world megacities most likely to be affected by climate change rose 27%, from 4.86 billion to 6.15 billion dollars. We need to have a discussion about how South Florida, one of the world’s most climate change vulnerable regions, can turn weakness into strength by becoming a net exporter of adaptation tech and knowledge. Imagine disaster analytics services, green finance corps, engineering solutions for living with water, and direct to consumer adaptation and mitigation solutions. Imagine a business, civic, and political leaders creating a policy framework to encourage these marketable solutions. Now imagine an Adaptation Incubator that helps get all those companies off the ground.” (Mario Alejandro Ariza)

Many participants cited strategies included in “The Drawdown Project,” a book which gathered a broad coalition of academics, scientists, policy makers, business leaders, and activists to assemble and present the best available information on climate solutions in order to describe their future impacts. One particular strategy, related to community resilience, was to:

Improve access to family planning:

— “Regarding population control - this isn’t something to be imposed, of course. Fortunately, just as in the US, the majority of women across the globe freely choose to have fewer children as they become more educated and gain more access to contraception. It improves the quality of their lives. In fact, the Drawdown Project shows that investing in educating girls and improving access to family planning could be the most effective way of reducing our greenhouse gas emissions.” (Nicolas Borja)
Resilient communities must also consider, well in advance, what action steps they'll seek to take if all or parts of South Florida become uninhabitable due to the impacts of climate change (whether that is extreme heat, a devastating extreme weather event, sea level rise, and/or affordability issues due to food and housing shortages). A few participants discussed our need to plan for retreat:

**Plan for retreat:**

— “For an (unpopular) moonshot, we need to start having discussions about South Florida's carrying capacity and begin bracing for a possible day where it is not feasible to have so many people living here. We will almost certainly have an episodic shock sometime soon (hurricane) that will allow us to reimagine and rebuild resiliently. I hope we use it as an opportunity to thoughtfully construct a more resilient region as opposed to blindly rebuild. I am worried that nostalgia for the past will preserve current failures. In anticipation of a region changing event, I think a series of “hard talk” discussions could be an interesting way to get people thinking about what some possible ways forward could look like when we have a generational event occur.” (Chris Caines)
Thank You!

This initiative came to life because of a huge group of partners and friends who believe in the power of civic engagement and who are committed to solving our region’s most pressing issues. Most importantly, we are grateful to the more than 3,100 individuals who have joined the 100 Great Ideas family to participate in these solutions-oriented dialogues about the most pressing issues in our region. Your voices built this report and progress will be made in our community thanks to your thoughtful engagement. We extend so much gratitude to the 16 incredible regional organizations who are immersed in the issue of climate resilience and sustainability and joined the campaign as members of the host committee: Before It’s Too Late, Catalyst Miami, Dream in Green, Engage Miami, Florida International University Sea Level Solutions Center, Miami Waterkeeper, The CLEO Institute, The Miami Foundation, The Nature Conservancy, The New Florida Majority, Sierra Club, Solar United Neighbors, Southern Alliance for Clean Energy, Urban Resilience to Extremes Sustainability Network, Urban Paradise Guild, and VolunteerCleanup.org.

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