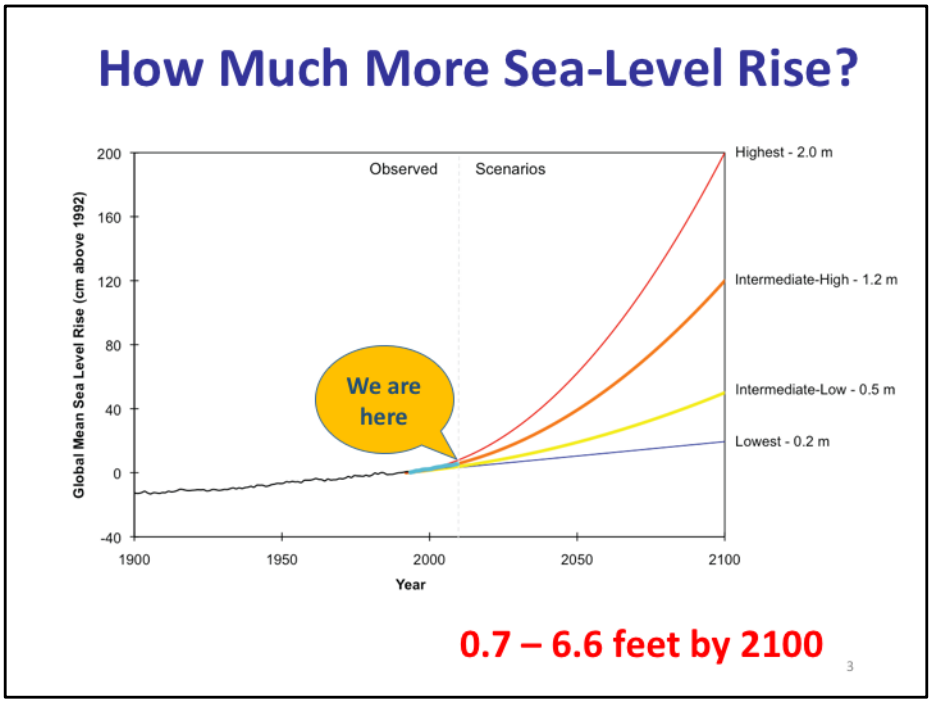
My name is James DeWeese. I work as a climate fellow at the Georgetown Climate Center, where we provide legal and policy support to states and localities on preparing for the impacts of climate change.

Here to talk with you about efforts to prepare our coastal about local adaptation

1. I'll talk about the drivers of adaptation efforts and how those will continue for the foreseeable future.
2. I'll highlight some of the innovative local approaches that are taking place across the country.
3. I'll talk about some of the resources we make available.



We've talked about resilience. Resilience in the face of what?

Let's look at where we are now with SLR. The important thing to remember is that no matter what curve we follow, we're at the very bottom. Rates will rise.

Locally, there's a lot of variation depending on tides, subsidence, geomorphology.

And keep in mind, SLR is much more than inundation. A lot happens before then: storm surge and saltwater intrusion

Source: Global Sea Level Rise Scenarios for the United States National Climate Assessment (Dec. 2012), https://scenarios.globalchange.gov/sites/default/files/NOAA_SLR_r3_0.pdf

We’re seeing impacts now, and people are taking them seriously.

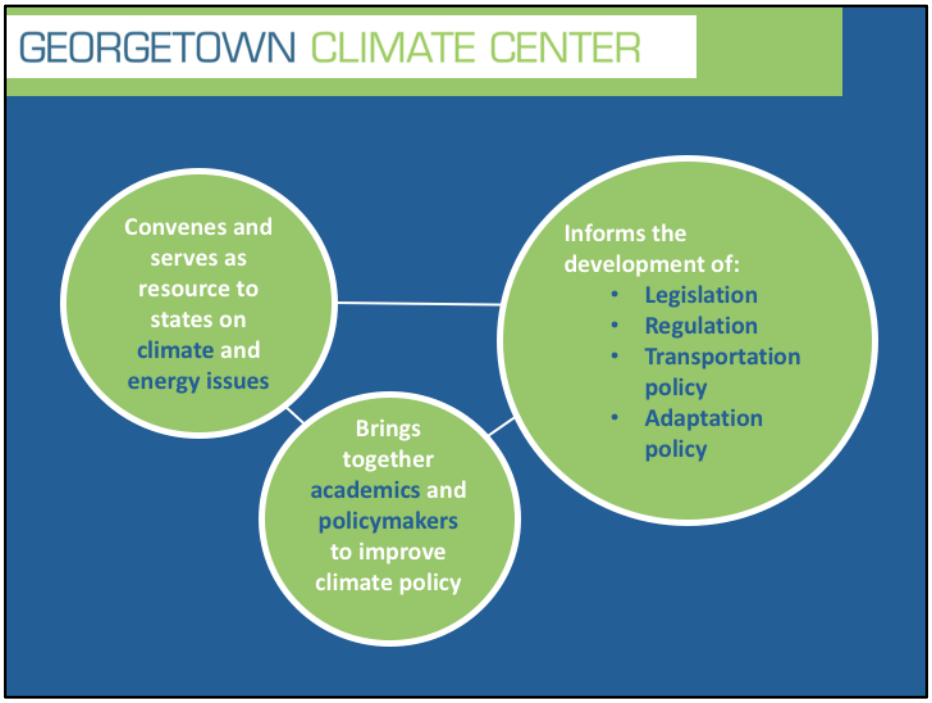
Some are maybe as amusing as they are scary.

Octopus in parking garage in Miami – sunny day tidal flooding

Others are just plain scary previews of what we may see more of.

Rockaway after Hurricane Sandy. (from Slate.com).

This is not a partisan issue. Health, safety, and smart investments appeal to everyone.



GCC was founded almost a decade ago specifically to support states in their efforts to reduce the causes of climate change and to help figure out ways to cope with and prepare for climate impacts that are already baked in.
To do that:

We bring them—and the federal government--together to learn from each other and experts. We also provide direct support to municipalities. And we create tools and other resources.

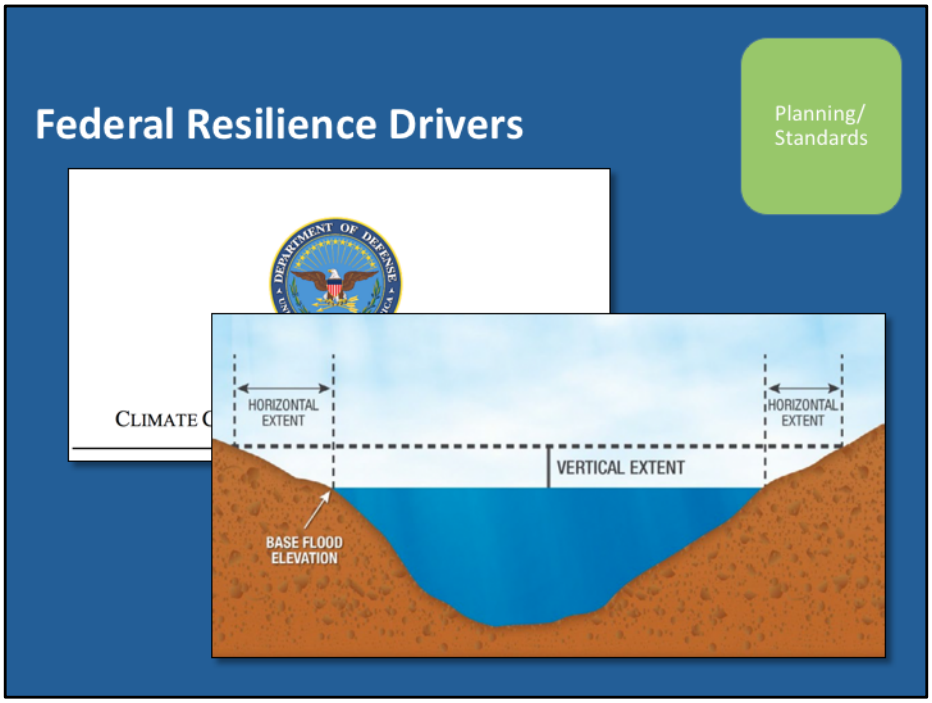
Before getting into specific examples, I want to talk about what's driving coastal resilience.

There's some uncertainty in light of the election, and we don't know what the changes will be. But I still think it's important to talk about the major federal initiatives because health, safety, welfare, economic resilience are not really partisan issues.

Climate resilience has become deeply entrenched in federal processes:

Here are a few examples:

Direct funding: NDRC – Which you will hear about. $1 billion for major climate resilience projects in eight states and five local jurisdictions. You'll hear more about those.



Resilience to future hazards is deeply embedded in federal programs that directly affect states and localities.

FEMA HMPs: to receive hazard mitigation assistance: "(i) An overview of the type and location of all natural hazards that can affect the State, including information on previous occurrences of hazard events, as well as the probability of future hazard events, using maps where appropriate."

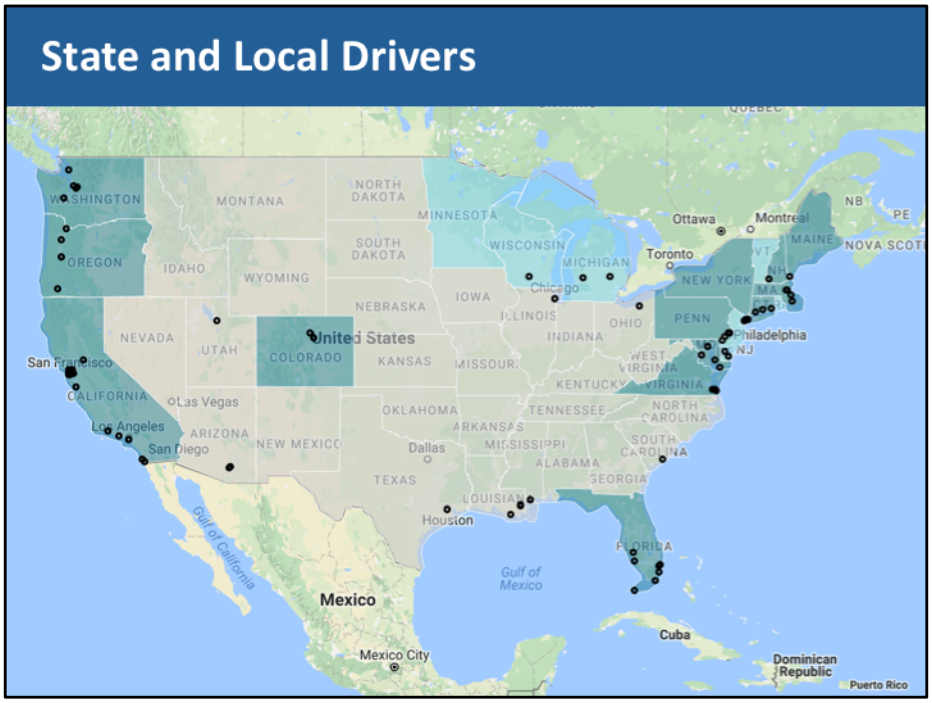
Defense – The military will continue to be a driver for local adaptation efforts. DOD itself has laid out a policy for adaptation. For the military, preparedness in their host communities is a matter of combat readiness.

-- In Norfolk and Virginia Beach, regional officials and the military just worked together for nearly two years on the Intergovernmental Pilot Project.

-- In Oxnard, Calif., TNC partnered with the Navy to help prepare Naval Base Ventura County to deal with the effects of sea-level rise. The base is home to the largest remaining swath of coastal wetlands in southern California. TNC will conduct economic analysis on various options, including those that rely on natural functions,

such as wetlands, to deal with rising sea levels. This will help protect surrounding, nonmilitary areas.

-- Standards for spending federal funds. FFRMS – We've defined our exposure based on historic patterns, but those no longer serve as an adequate guide. The FFRMS requires that federally funded projects use higher standards to protect federal investments against future flooding taking into account what we know about future patterns.



And no matter what happens at the federal level, states and locals will continue to lead the way on preparing for coastal impacts as they've done through legislation and executive action.

These are places with plans.

Many states and local governments have begun this process and are proactively asking what climate vulnerabilities they face and what policies can address these risks. GCC monitors these state and local planning efforts by creating a database of these plans and analyzing the progress states are making in reaching their objectives. This database provides groups like people in this room to identify what kinds of solutions various groups are proposing and identify places where action is underway.

- For states with state-wide adaptation plans (highlighted here in dark blue), we provide users with a detailed view of the state's progress implementing those plans.
- Black dots on the map indicate localities with adaptation plans. These are included in our Clearinghouse.
- States highlighted in light blue have statewide adaptation planning underway. For

these states, we provide a narrative description of the steps those states are taking and links to resources in the AC relevant to that state.

- States in gray also have dedicated pages that include links to relevant AC resources, like state agency plans or local adaptation plans.

Finally, the markets will also dictate the need for localities to continue to prepare for the impact of rising sees. When local leaders get inquiries from the folks who decide how much it will cost to borrow money, those leaders pay attention.

So what are people doing?

Let's start with some state examples and then I'll look at some local initiatives.

States are changing the way they spend their money to account for climate change.

For example, there's Maryland Coast Smart:

"Coast Smart" Guidelines provide recommendations to consider coastal flooding and sea-level rise in planning and constructing all new or rehabilitated state structural and infrastructure projects, as well as state-funded private projects. The purpose of the Coast Smart Guidelines is to ensure that Maryland is making sound investments in light of sea-level rise and other coastal impacts related to climate change.

* Siting guidelines (including not building/rebuilding in areas likely to be inundated in 50 years)
- Design guidelines, including freeboard.
- Checklist

Could also be implemented at local level.

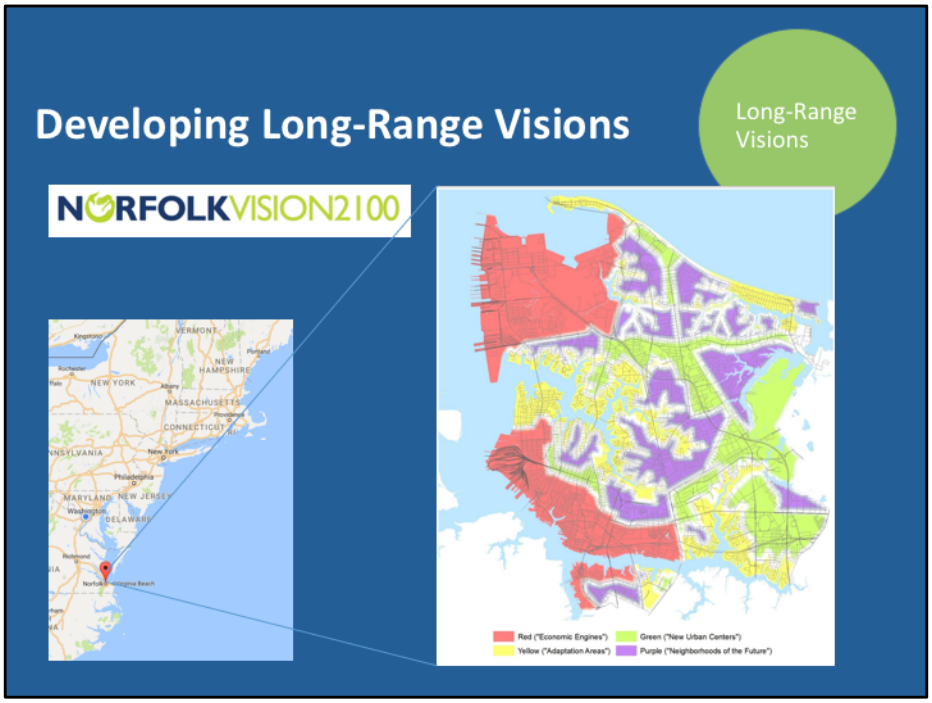
Later codified.

States are exploring innovative financing models to help residents and communities adapt.

ShoreUp Connecticut provides low interest loans for home elevations and other flood-proofing retrofits.

Residential structures have to be raised to the 500-year flood plus a foot; 100-year plus a foot for commercial.

Sandy money to capitalize the program. One thing I will note as a challenge here is that there aren't a lot of resources in the absence disaster and that really is perverse incentive.



Localities are using adaptation planning processes to start taking a longer view …

Comp plans/general plans: Cities, states, communities are looking at their vulnerabilities and then planning for them. In some cases in their comprehensive plans, in some cases well beyond those typical timeframes. For example: Norfolk: Looking at projected land use to 2100, thinking about where and how the city will continue to invest.

Norfolk is looking to 2100
Here:
1. Economic engines: build up, densify, protect.
2. Adaptation Areas: Yellow, adapt or accommodate. Limit major investment to reduce development pressure. But also help people recoup value lost to water. Education, etc.
3. Green areas: New Urban Development. High and dry urban centers of the future.
4. Purple: Neighborhoods of the future. Existing neighborhoods that could benefit from better connections.

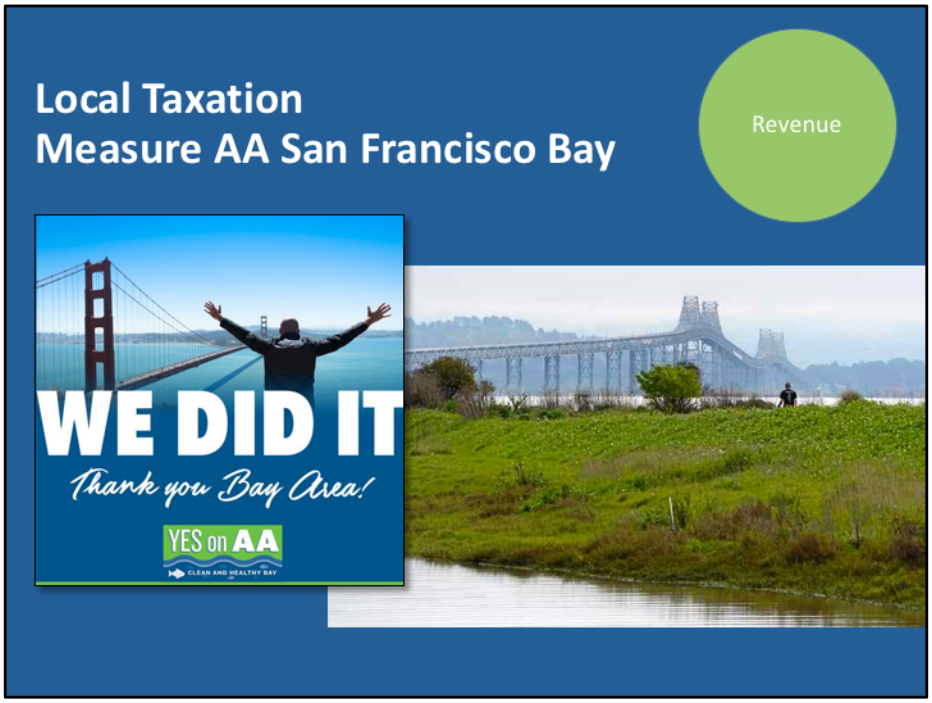
Using regulations to bolster resilience

Zoning and development review: Examples: Traditional zoning: Setbacks, Development review Boston development checklist.

Boston Zoning Regulations, Article 80 Guidelines
One of the strongest tools local governments have is their zoning and land use powers.
Boston (2013) adopted new zoning guidelines that require developers to consider the long-term effects of climate change on a proposed project.
Developers have to assess how the proposed project may be impacted by climate change under different scenarios by answering a questionnaire.
They then have to design the project to mitigate those impacts
This is all done during the permitting phase and only applies to large projects.
This slide shows Boston's Spaulding Hospital – which was designed before the new rules were put in place – but it gives you an idea of some of the adaptation measures that can be implemented in large-scale development project.

Source: Preparing for the Rising Tide, Boston MA (Feb, 2013)

http://www.cityofboston.gov/images_documents/preparing_for_the_rising_tide_final_tcm3-40186.pdf



Local funding:

Bay Area just voted for a $12-per-parcel levy that will generate half a billion dollars for restoring wetlands over the next 20 years.

Role of wetlands in preparing for SLR:

- Serve as sustainable buffers, protecting people and infrastructure from damaging storm surge and wave action.
- People have been increasingly looking for ways to partner with nature, rather than to fight against it. This is particularly important where natural processes protect other man-made development and infrastructure. Note: “Bulkheads and beach berms disrupt shore currents and block natural beach replenishment, which starves intertidal zones of sand, gravel and sea wrack.”

“Thousands of acres of land around the San Francisco Bay will be returned to wetlands after voters in the nine-county Bay Area approved a new $12-per-parcel tax that will raise millions of dollars for bay enhancement and habitat restoration. Grants from the $500 million raised over the next 20 years through the measure will

begin to be distributed in 2018 and could attract additional state and federal funds, supporters said. Measure AA passed with 69 percent of the vote in the primary election, exceeding the cumulative two-thirds majority required for approval. Measure AA is the state's first-ever parcel tax to be levied across a region."

http://www.sfgate.com/politics/article/SF-Bay-protection-Measure-AA-passes-7970365.php

Communities are also working across boundaries and with new partners, such as universities.

Florida had action on climate and then there was a political switch. These communities, however, were already feeling the impacts and decided they needed to pursue action collectively.

Unified projections, working from same scenarios. Developed regional plan to coordinate response. Helping munis implement. Provided each other with political cover.

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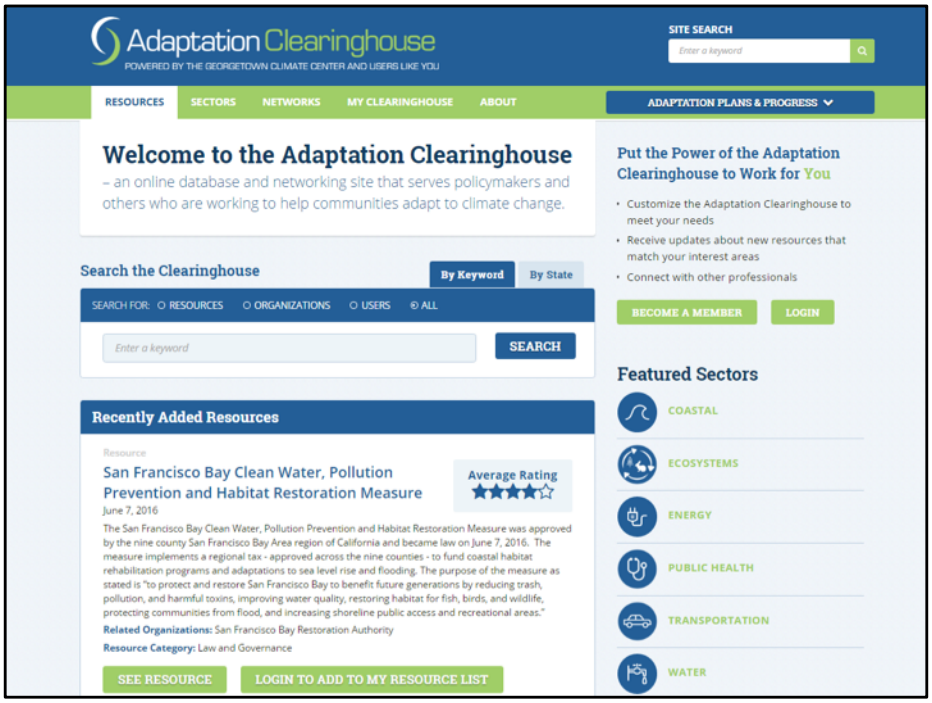
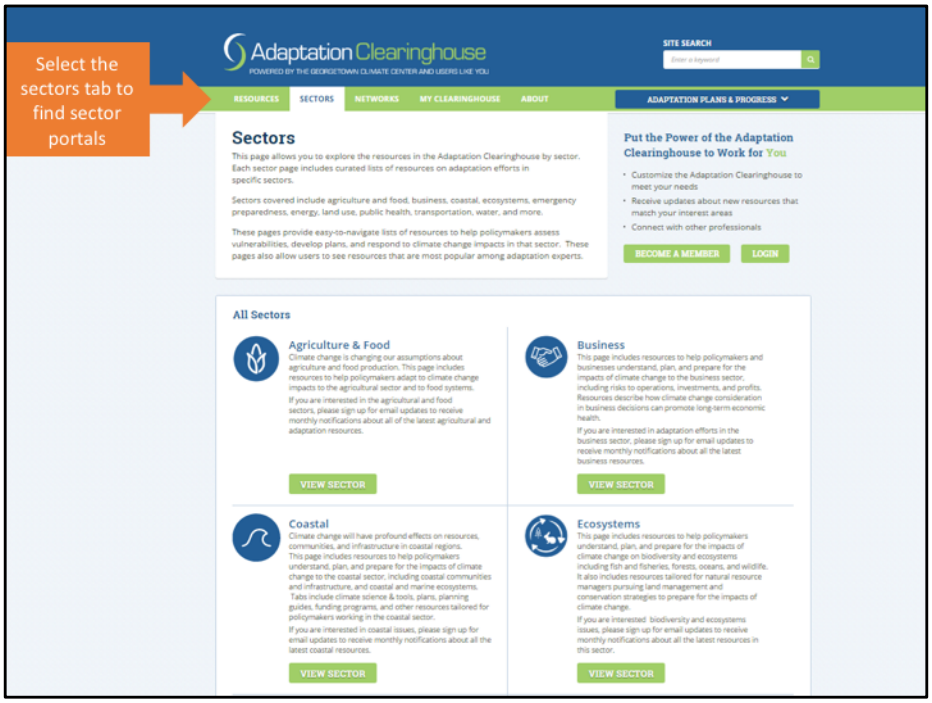
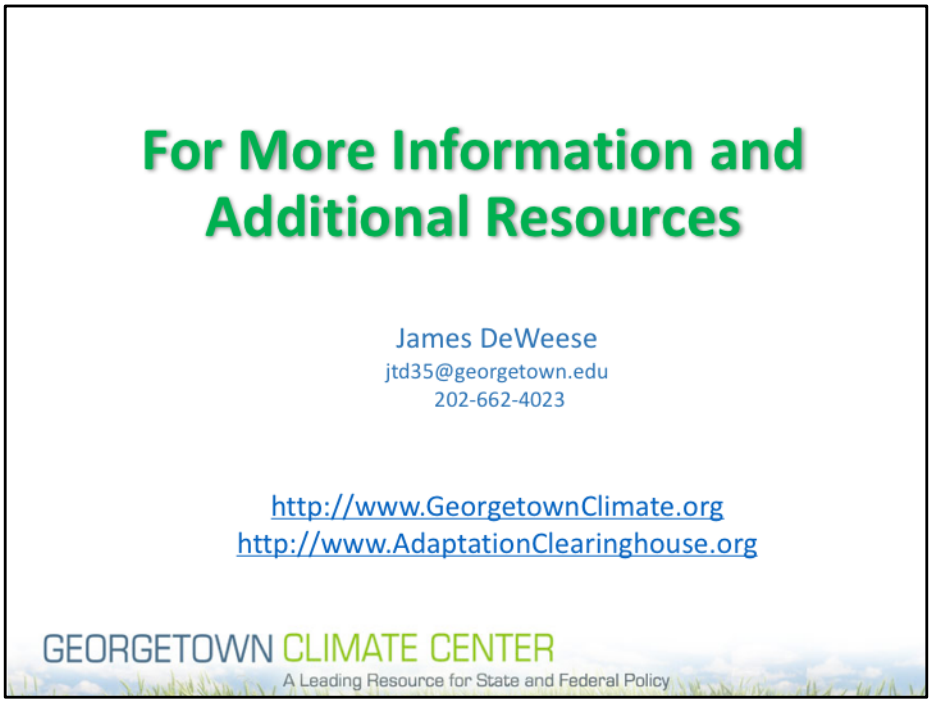


All of these resources are available in the adaptation clearinghouse.



You'll find all of these examples and resources within our Adaptation Clearinghouse, a curated collection of thousands of resources keyed to specific sectors and applications.

Nina will talk more about resources available to help localities adapt to climate change, but I'd just like to give you a brief overview of the AC.



Reiterate:
-- the need to act remains
– there are drivers independent of the federal government, although to date most the major action has relied on federal funding.
-- there are tools to help localities navigate these complexities.