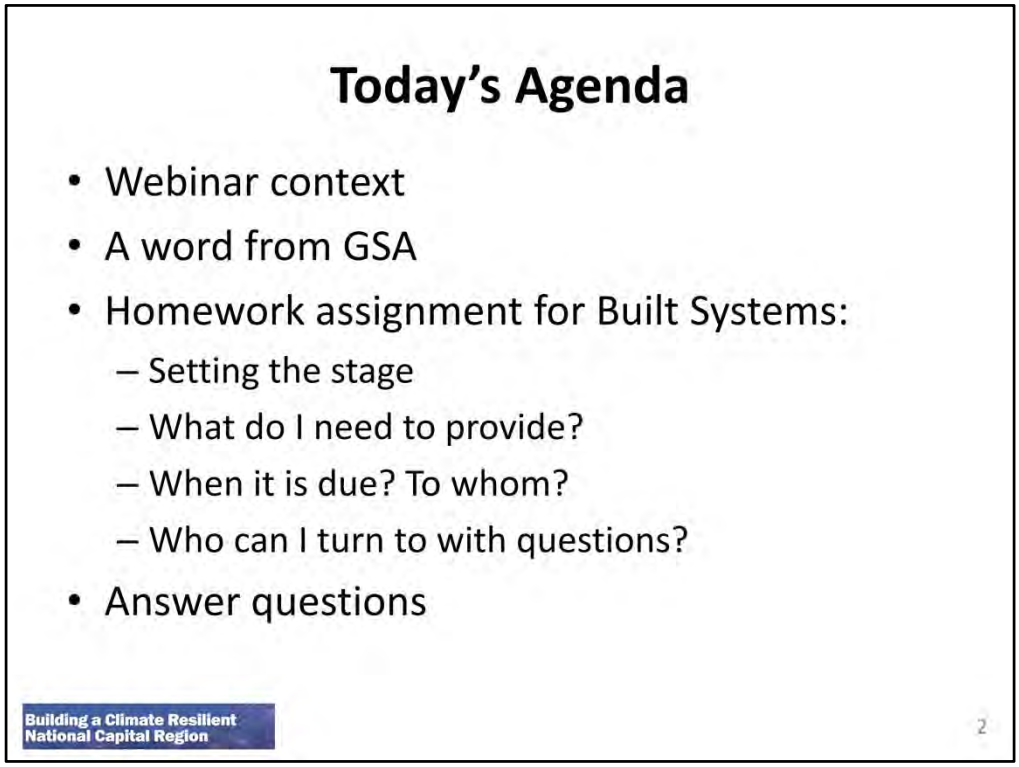
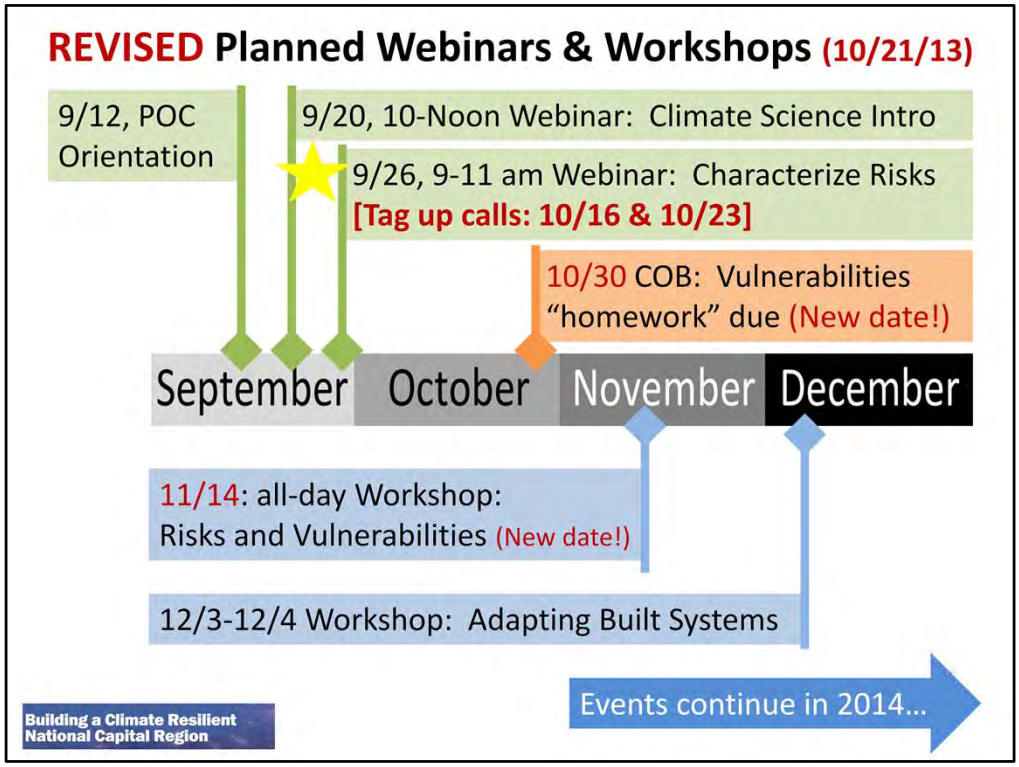
Characterize Risks Webinar – Built Systems

Ann Kosmal (GSA)
Christina Hudson (SAIC/Leidos)

September 26, 2013
(Revised October 21, 2013)



- Webinar context – Orientation Webinar presentation in pdf was sent to Webinar attendees.
- GSA is providing remarks as questions arose in Orientation Webinar regarding role for those Federal agencies that have office space in GSA buildings.
- Description of homework assignment due 10/30
- Answer questions



- Schedule chart presented during Orientation webinar (9/12) – gives overview of webinars and workshops
- Climate Science webinar (9/20) was recorded. We're in the process of making it available.
- Focus in 2013 – Built Systems; in 2014 – Natural and People/Community systems (see Slide 13)

******NOTE: Update email sent to all on 10/9/13:**
We recognize that we are currently in a less than desirable situation with the government shutdown and many of our hard-working colleagues are unable to work at this time.

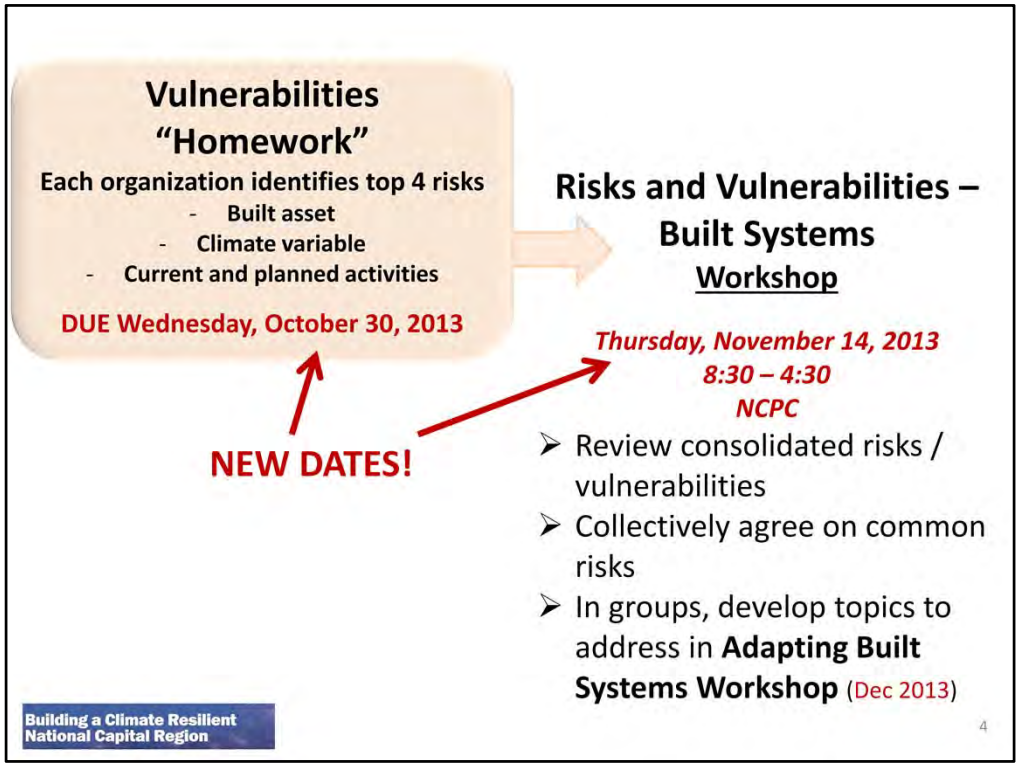
Despite these challenges, we would like to move forward as much as we can and provide information to everyone and in particular to those who can work during the shutdown.

Here is the latest in terms of upcoming events - all of which are related to Built Systems:

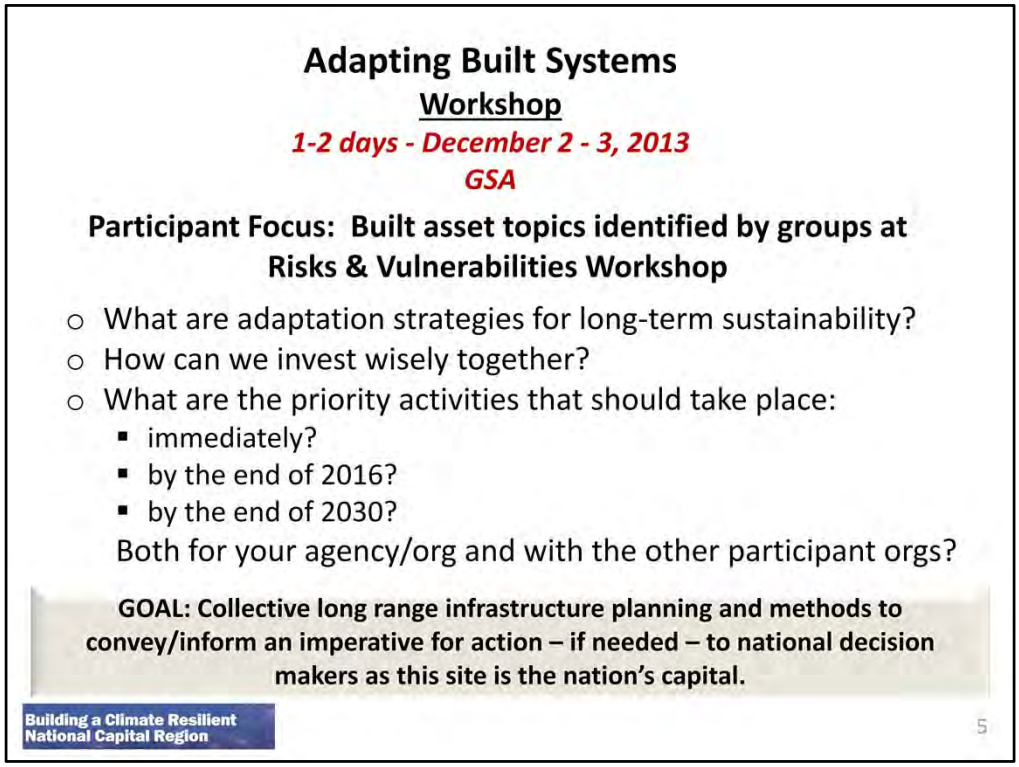
- Homework assignment - should be distributed by COB October 11th with initial due date of October 23rd (Now 10/30) recognizing that others may need more time
- Information and Q&A teleconferences/webexes will be set up for Wednesday, October 16th and 23rd, for 1 hour starting at 10 am to answer questions relative to the homework assignment
- The Risks and Vulnerabilities – Built Systems - Workshop, currently scheduled for Wednesday, October 30th, may be rescheduled for November 13 or 14, 2013 – NOW

rescheduled for 11/14)

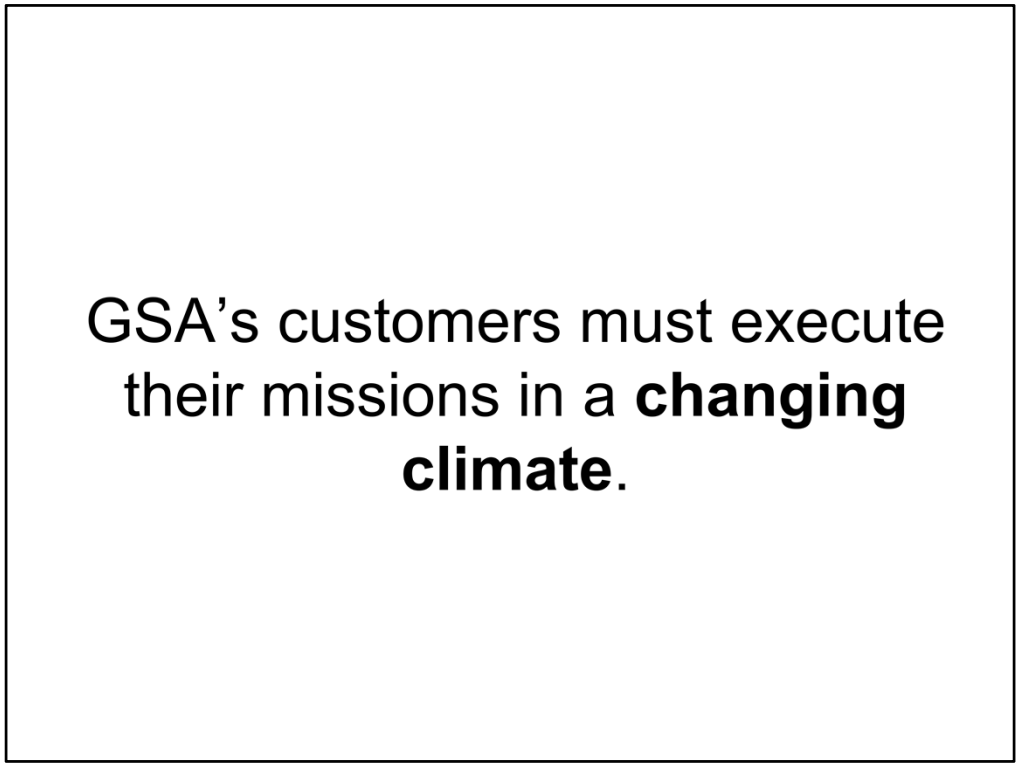
- The Adapting Built Systems Workshop remains scheduled for December 2-3, 2013
- MWCOG is finalizing a website to host information and files associated with this series of events - that link will be distributed with the Homework assignment



- Important to remember: "Homework" yields important information for Risks & Vulnerabilities - Built Systems - Workshop on 11/14; efforts during that workshop leads to the starting material for Adapting Built Systems Workshop in December.

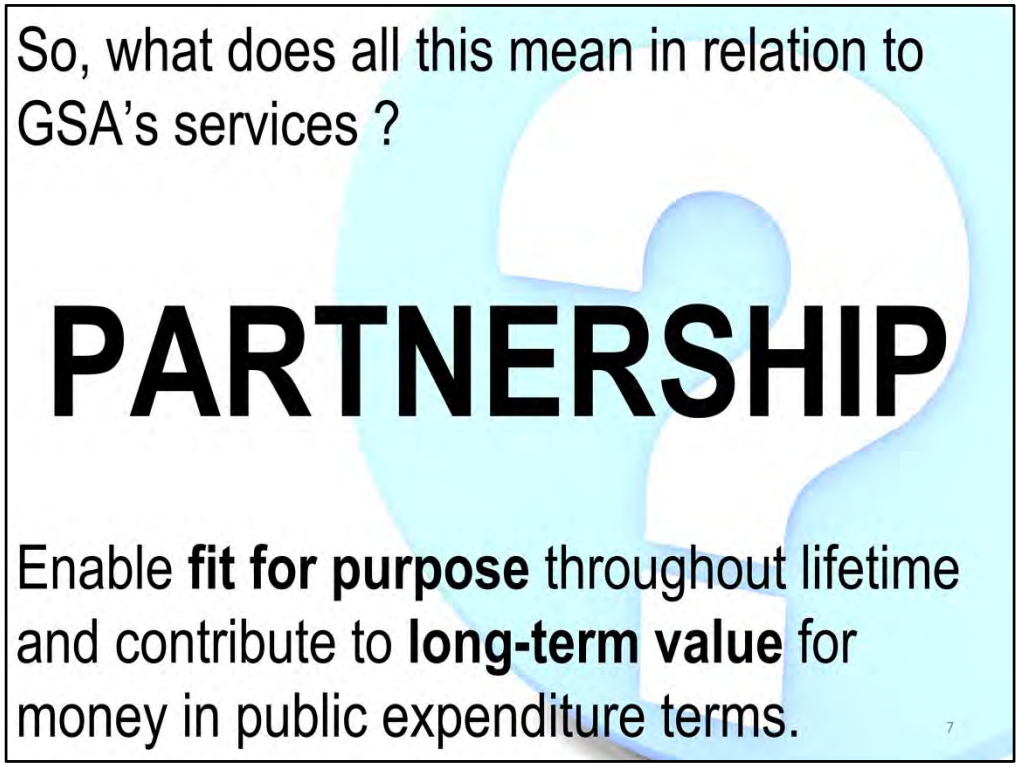


- Focusing on how we develop strategies for the long- term; focus is on long-term sustainability of the mission.
- What do we need to do immediately? What do we need to do by the end of 2016? By the end of 2030?
- No one entity is going to solve this alone. Need to have all involved to save this place with special meaning.



A. Kosmal (GSA):

GSA is providing remarks as questions arose in Orientation Webinar regarding role for those Federal agencies that have office space in GSA buildings.



GSA is providing remarks as questions arose in Orientation Webinar regarding role for those Federal agencies that have office space in GSA buildings.

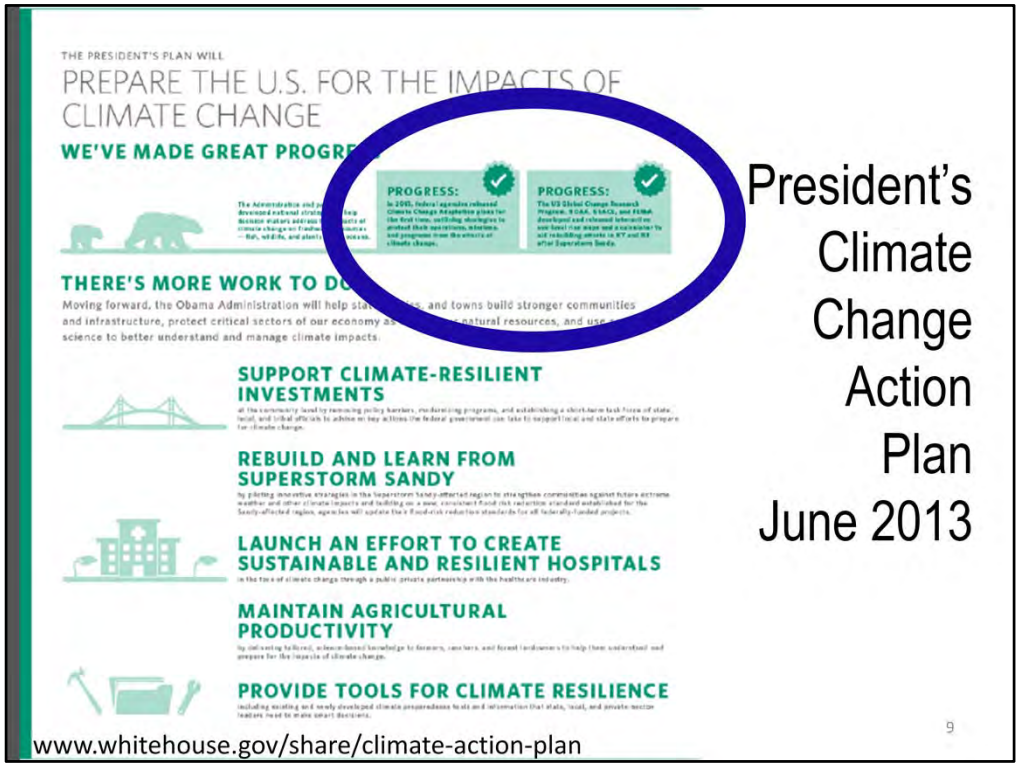
A. Kosmal (GSA):

- GSA supplies real estate services and supply acquisition services.
- Really important to understand what we're all working for as a partnership.
- GSA needs input from its customers to have the impetus for getting funding to address the most important issues.
- GSA cannot do this alone!

GSA is providing remarks as questions arose in Orientation Webinar regarding role for those Federal agencies that have office space in GSA buildings.

A. Kosmal (GSA):

- Want to be Future Ready and **AVOID OBSOLESCENCE**
- This is good management as it is adjusting to a changing climate to reduce negative effects and take advantage of new opportunities.
- Looking for the sweet spot of mission, climate, and budget.



GSA is providing remarks as questions arose in Orientation Webinar regarding role for those Federal agencies that have office space in GSA buildings.

A. Kosmal (GSA):

- Federal agencies were already required to complete a high-level risk assessment. Many other local and regional agencies and governments have also been working on climate change adaptation.
- Should be able to use this information going into these workshops.
- Recognize that organizations may not have done so.

Homework Assignment - Setting the Stage

- What is the focus *area*?
- What's the *scope*?
- What *level* of risk or vulnerability assessment are we expected to do?
- What *climate variables* are we looking at?

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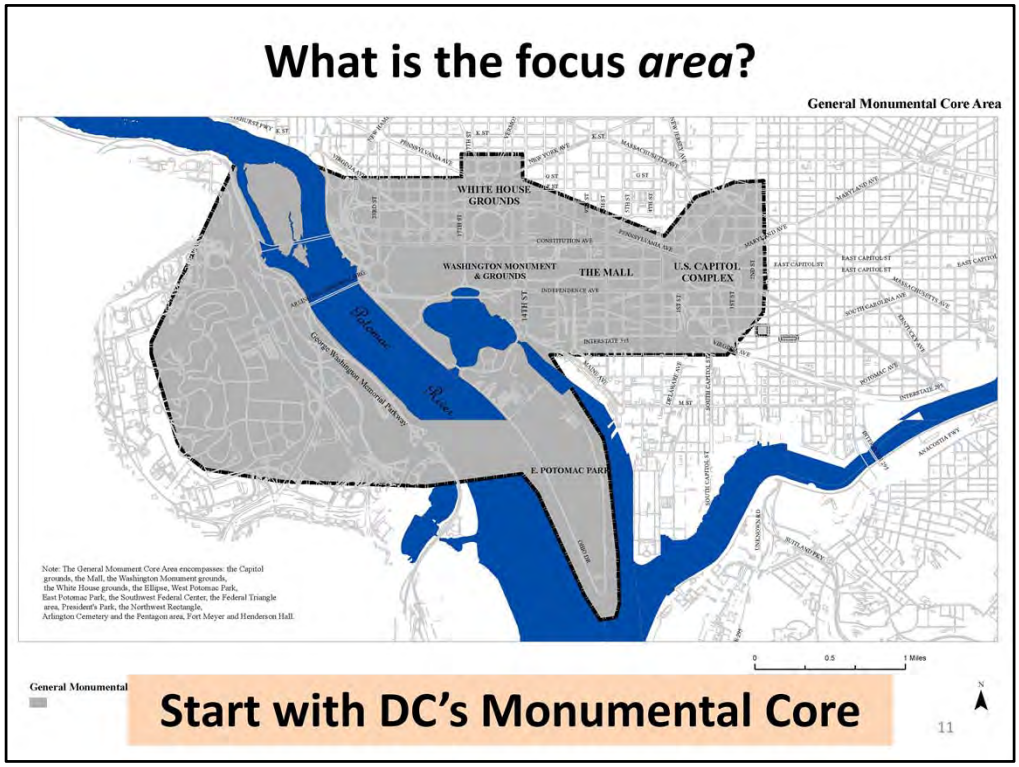
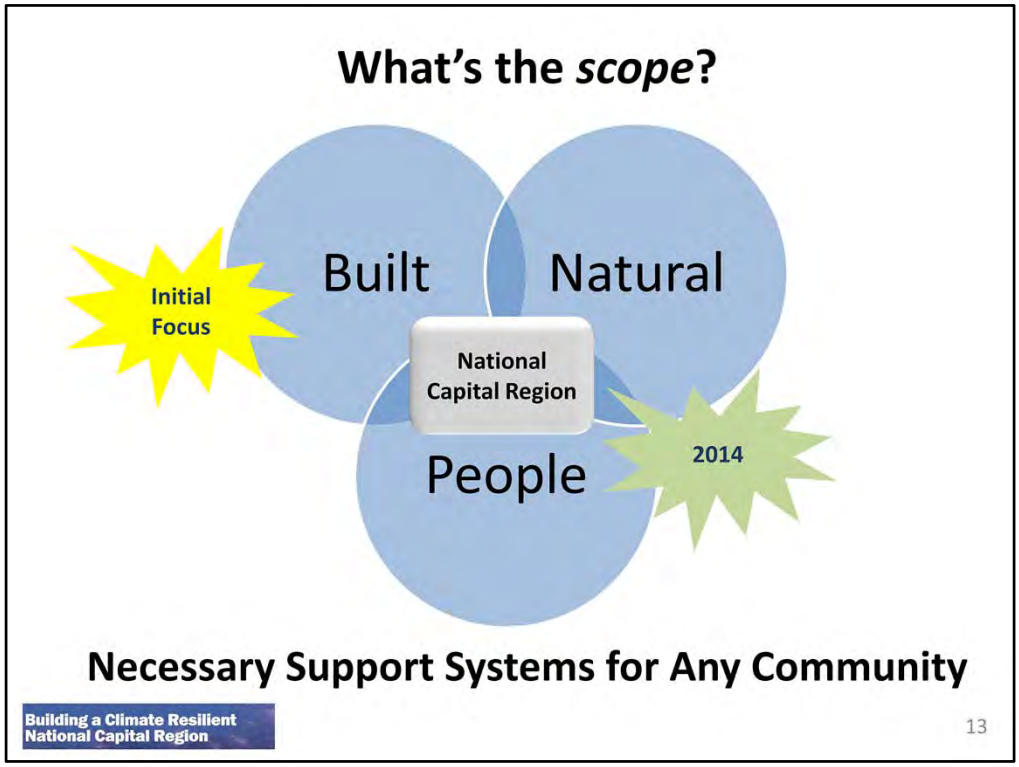
- These are the questions we're addressing relative to the homework

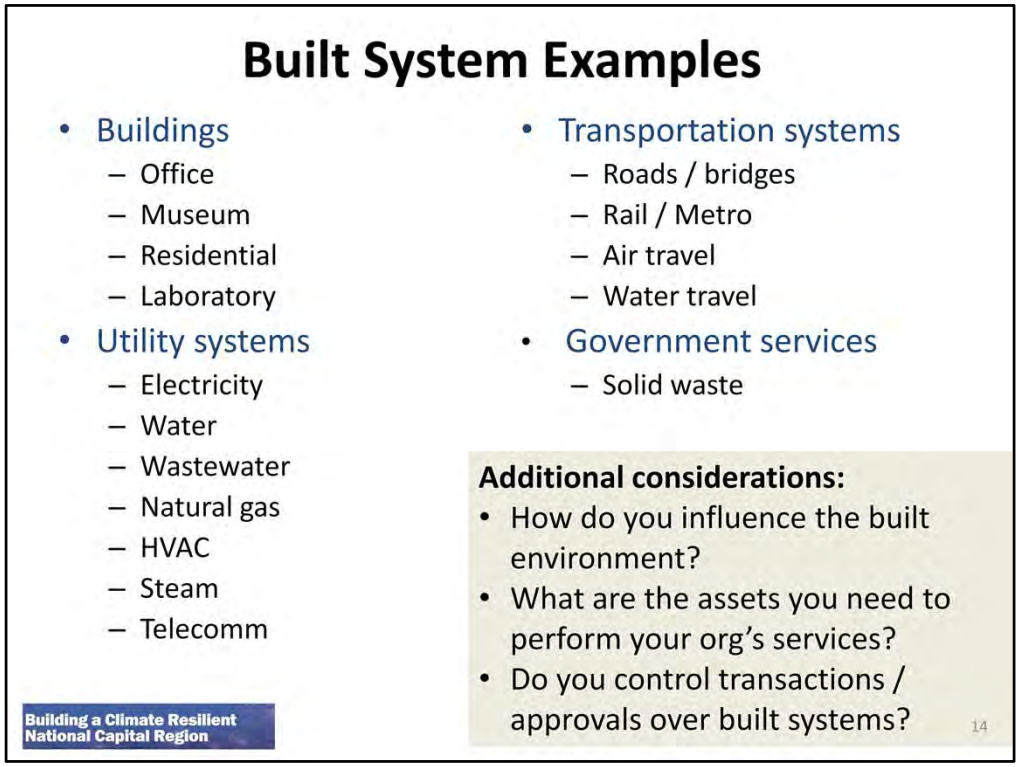


- Focus area can start with the Monumental Core pictured on this map. It's not a neat little rectangle.
- This monumental core is part of a larger context – see next slide.

- Here's a graphic of the larger system, of which the Monumental Core is a part.
- Note that the MWCOG area goes well beyond.
- Important to keep in mind ---- you understand your organization's goals and objectives ---- which of the built systems your organization needs or relies upon might be affected by climate?



- All of these systems are necessary for your organization to perform its mission, goals, and/or objectives.
- Core Planning Team thought it best to 'divide and conquer' these systems while we're "building capacity" in the DC region.
- Initial focus on the built environment; the other two will be addressed together in 2014.

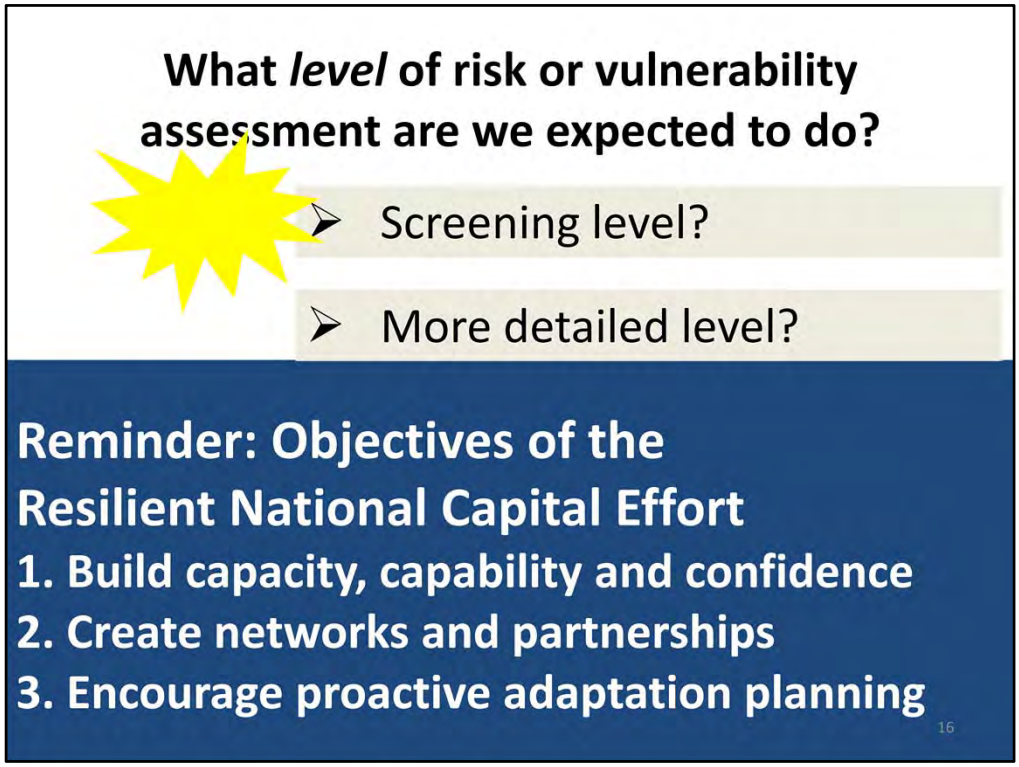


- Here are some examples of built systems.
- Comment from GSA (A. Kosmal): while GSA may be the building owner of many agencies on the call, you still have a vested interest in the building and other assets you need to perform your work ---- you need the internet, phones, data storage, etc. See next slide.

Telecomm

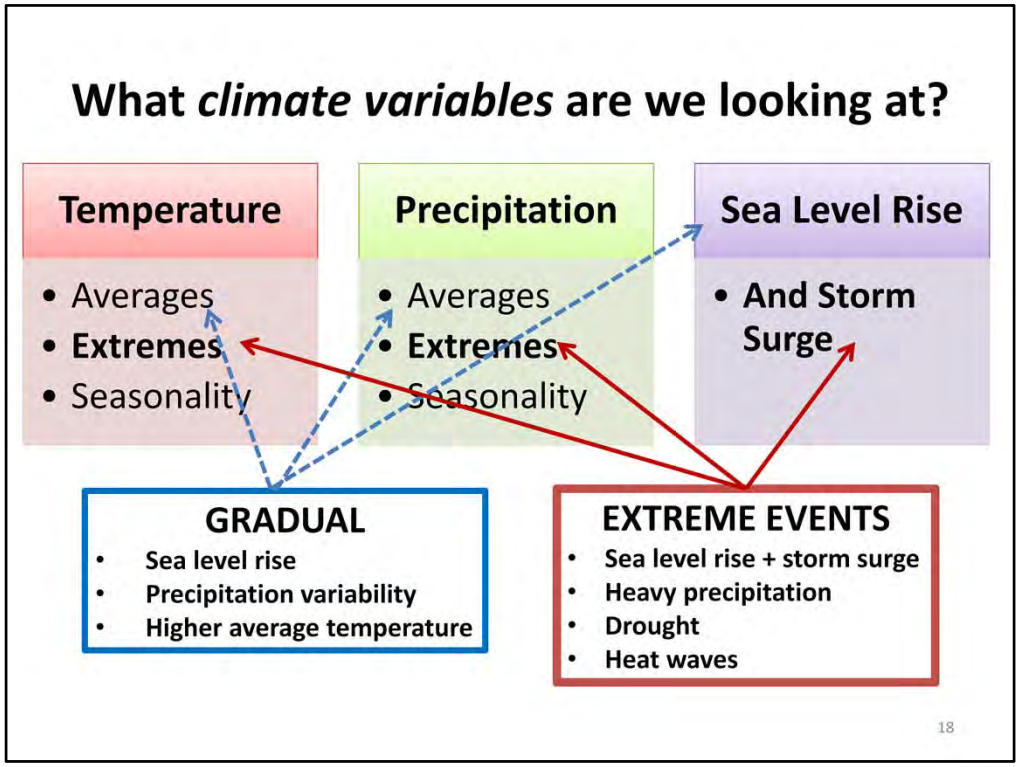
Internet
Land Lines
Cellular Service
Data Centers
VPN & Telework
“The Cloud”
Network Drives
Multiple Providers

- Additional examples of Telecomm portion of built systems.

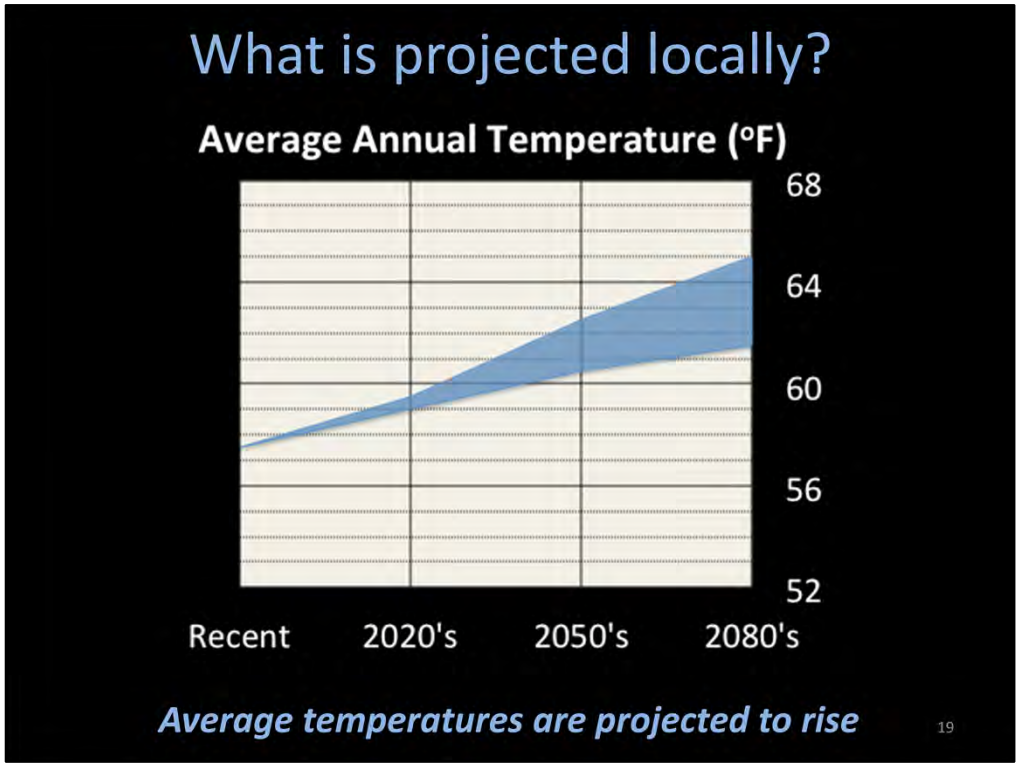


- Looking for a screening level vulnerability assessment.
- Need to remember the three goals for this effort
- We are in the Nation's Capital, which has rich cultural value.
- Let's figure out how we can work together to start adaptation planning. We're not going to get everything figured out, but let's figure out how we can work on this together.
- Some of you may already have more detailed assessments for various assets – that's great; others may have less information – that's fine too.

- Lots of good work already done. Here are some examples.
- Lots of treasures damaged in the 2006 flood.
- We want to use these resources in our work going forward. We're not starting from Ground Zero.

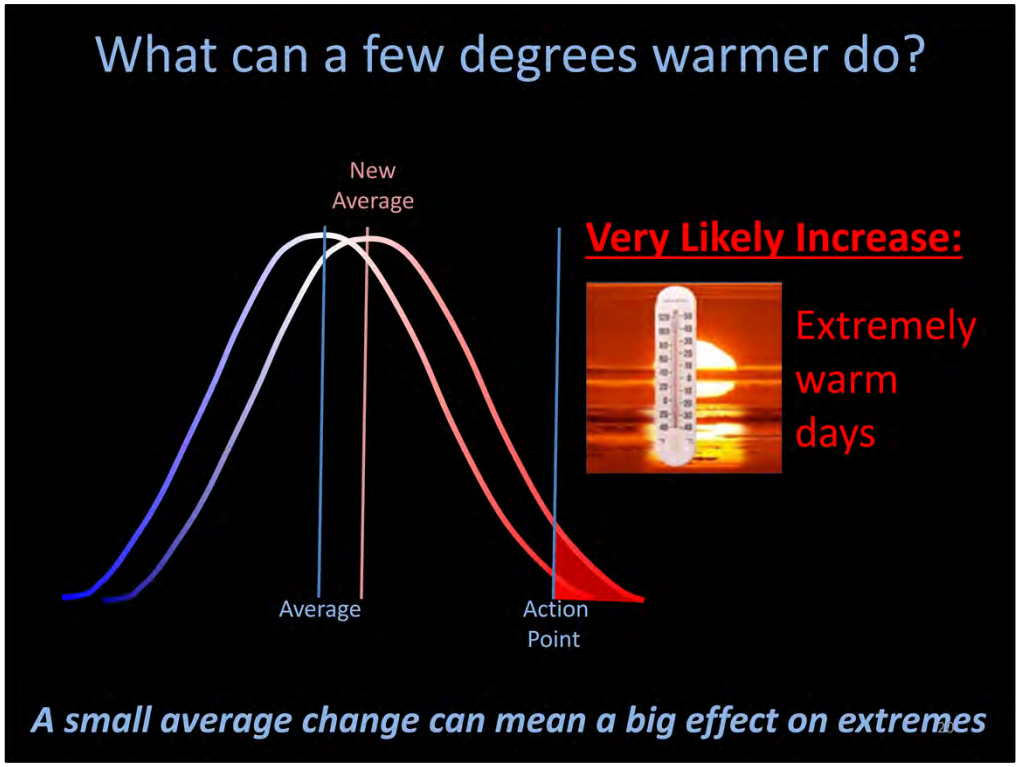


- We're looking at 3 climate variables during this process – temperature, precipitation and sea level rise (combined with storm surge)
- Information about Temperature and Precipitation often comes in 3 forms – annual averages; likelihood of extreme events; and seasonal changes. [The current NASA climate information handout contains all but seasonal change information.]
- We're requesting information in the Homework Assignment relative to the impacts on built systems from Gradual changes (See Slide 30):
    - Sea level rise
    - Increased precipitation
    - Higher average temperature
- We're also requesting information in the Homework Assignment relative to the impacts on built systems of Extreme Events (See Slide 30):
    - SLR + storm surge (18.1' is the storm surge height to use for this exercise)
    - Heavy precipitation (precipitation in any form)
    - Drought
    - Heat waves



From Climate Science Introduction Webinar (9/20/13). Information is in the NASA Washington Metro Area Climate Change Information Handout (http://www.ncpc.gov/climate/

- Average annual temperature projections indicate a faster rise than in the twentieth century.
- Based on 16 Global Climate Models (GCMs) and 3 emissions scenarios. Data is for the Reagan National Airport, Washington DC. Based on the middle 67% of values from model-based probabilities.
- Source: NASA projections for the Washington DC area using a format inspired by a 10 September 2012 NY Times article.
- A NASA Climate Adaptation Mobile App with this information will be released this fall, and will be updated as new science becomes available.



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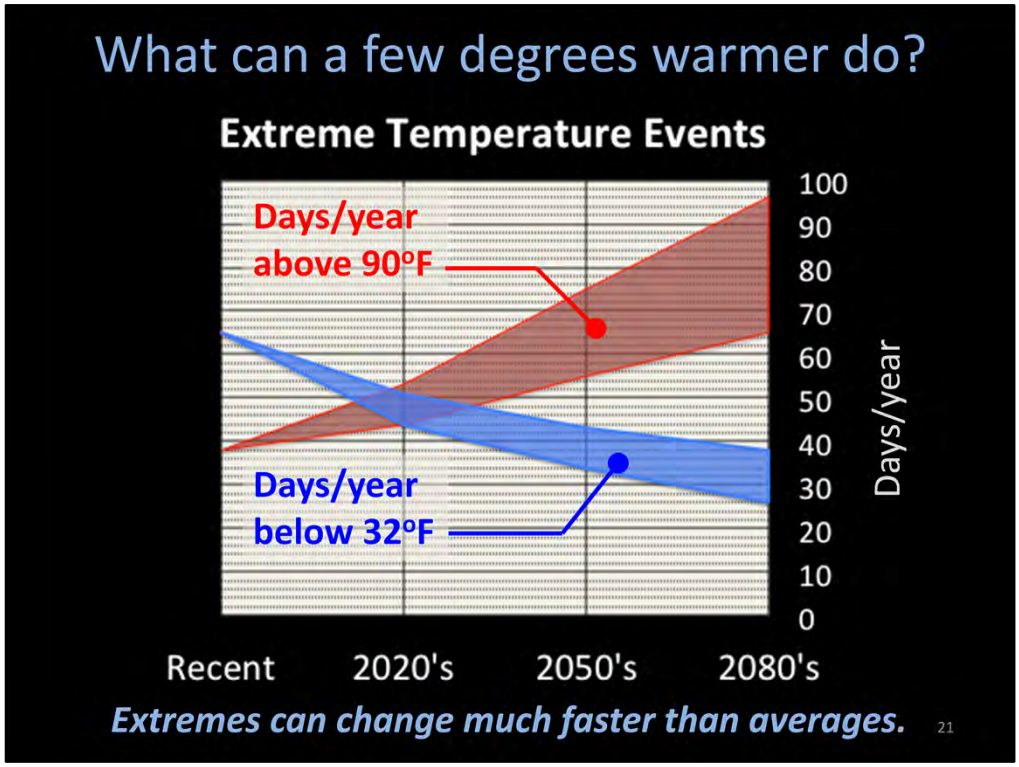
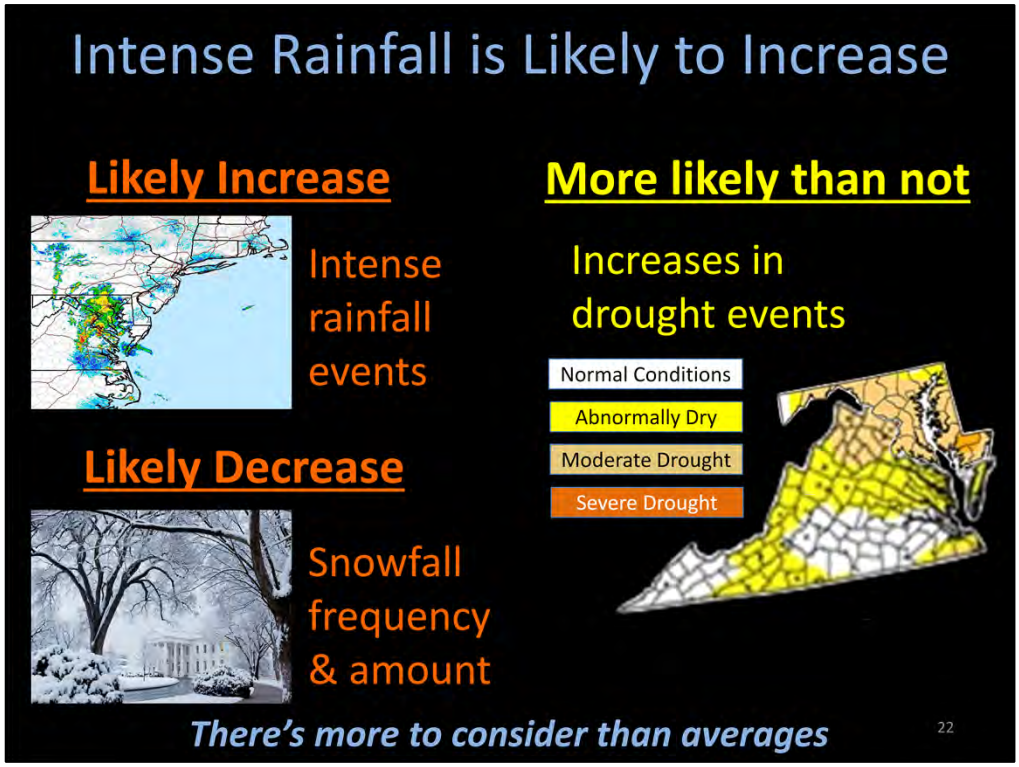
- A modest change in average temperature might not seem very important to institutional stewards, but the change may result in a big change on the number of days above or below extreme temperatures.
- The term "action point" ties to how an organization operates. One example action point is the temperature at which outdoor work is curtailed; another is the point at which air conditioning or heating is needed.
- Maybe the action point is when tracks start to buckle, when planes get stuck on the tarmac. Point at which you cannot work outside.
- A NASA Climate Adaptation Mobile App with this information will be released this fall, and will be updated as new science becomes available.



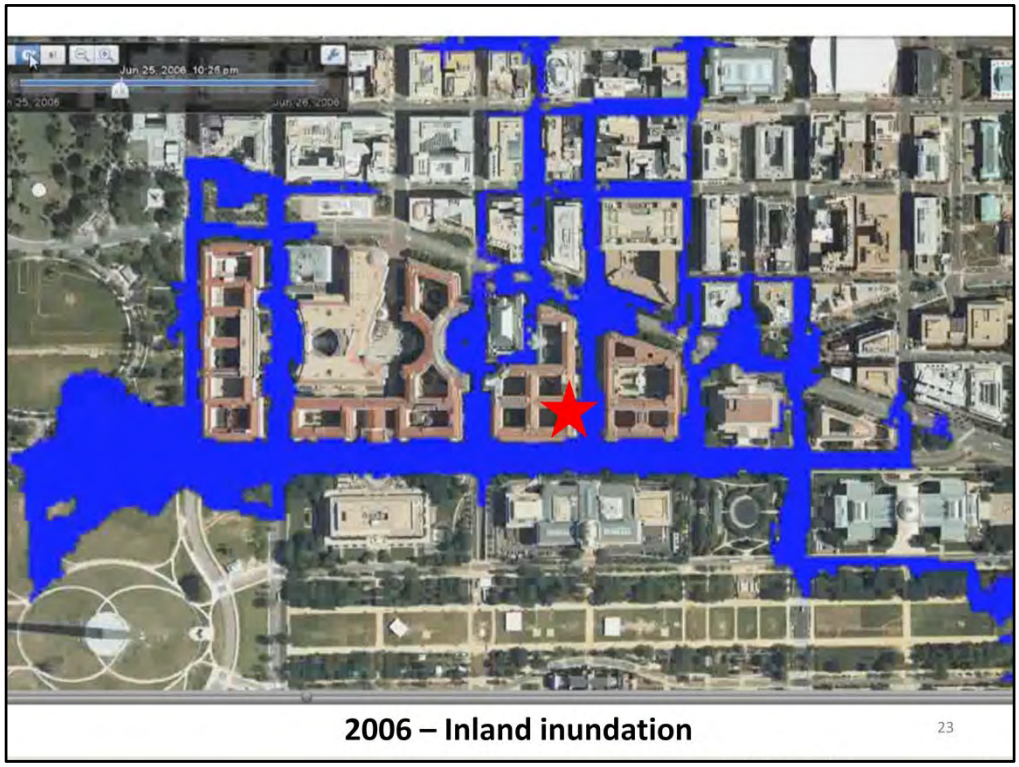
From Climate Science Introduction Webinar (9/20/13). Information is in the NASA Washington Metro Area Climate Change Information Handout (http://www.ncpc.gov/climate/

- Compared with recent averages, the number of days over 90 degrees is projected to roughly double by the 2080's.
- On the other hand, the number of days it freezes is projected to be reduced by half in that same timeframe.
- Based on 16GCMs and 3 emissions scenarios. Data is from BCSD dataset.
- Source: NASA projections for the Washington DC area projections using a format inspired by a 10 September 2012 NYTimes article.
- A NASA Climate Adaptation Mobile App with this information will be released this fall, and will be updated as new science becomes available.

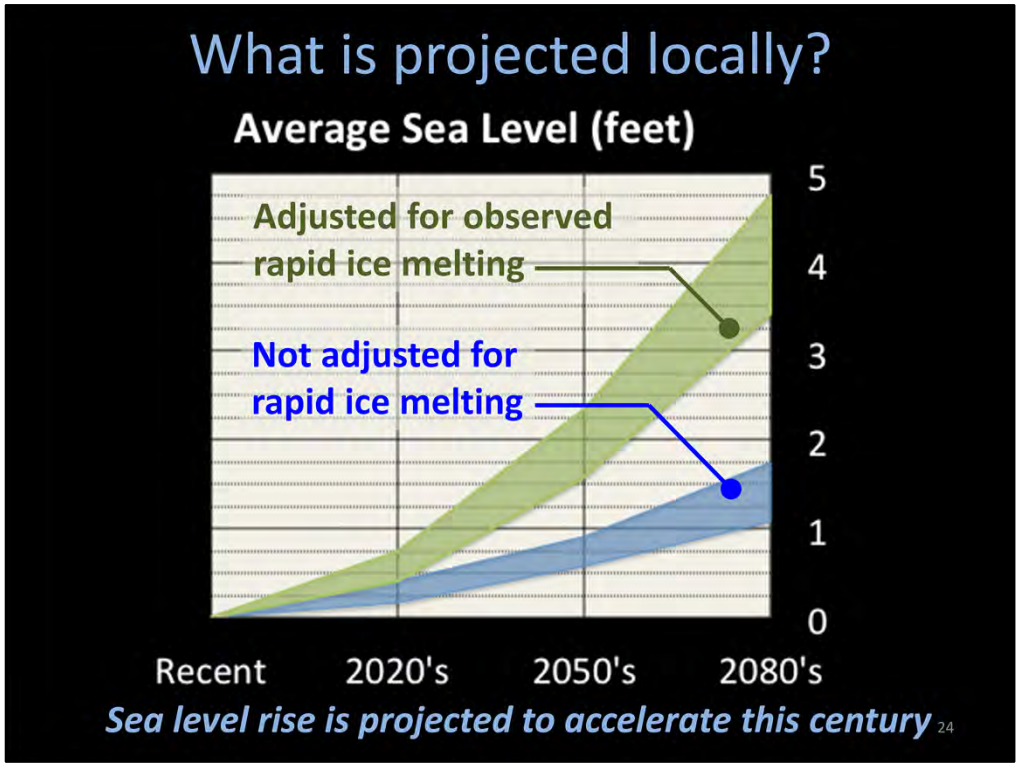


From Climate Science Introduction Webinar (9/20/13). Information is in the NASA Washington Metro Area Climate Change Information Handout (http://www.ncpc.gov/climate/

- This slide rounds out the qualitative projections in order of likelihood.
- Droughts and floods likely in the future.
- A NASA Climate Adaptation Mobile App with this information will be released this fall, and will be updated as new science becomes available.



- This is a depiction of what flooding due to precipitation (not storm surge) can cause – from 2006. map based upon flooding levels as shown on planters.
- While important, this area of the DC was studied at great length after this event (See Slide 18 for some examples)



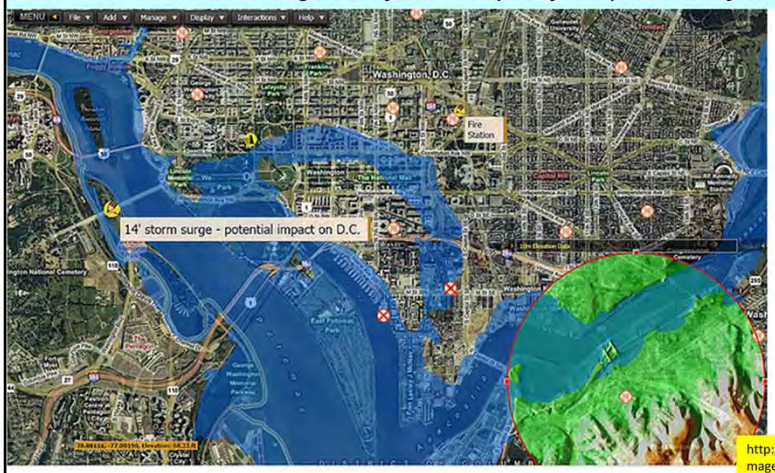
From Climate Science Introduction Webinar (9/20/13) Information is in the NASA Washington Metro Area Climate Change Information Handout (http://www.ncpc.gov/climate/

- Sea level rise is expected to continue. Observations of polar ice melting indicate a faster rate of sea level rise, so it's wise to consider this possibility when evaluating impacts.
- Based on 7 GCMs and 3 emissions scenarios. Baseline (recent) is 2000 to 2004. Rapid ice-melt scenario is based on acceleration of recent rates of ice melt in the Greenland and West Antarctic ice sheets and paleoclimate studies. Projections based on the Washington Ship Channel tide gage.
- Note: NASA's internal planning guidance is to plan for the Rapid Ice Melt lower range. In this case, the 3-3.5 feet level.
- Source: NASA projections for the Washington DC area projected sea levels using a format inspired by a 10 September 2012 NYTimes article.
- A NASA Climate Adaptation Mobile App with this information will be released this fall, and will be updated as new science becomes available.

What about Storm Surge?

For the purposes of this effort,
using the Category III level: 18.1 feet (see Slide 27)

Historical 1933 storm surge 11.3 feet; 100-year floodplain 13.5 feet



http://www.flickr.com/photos/depictionimages/3789318227/in/photostream/

Washington, DC Storm Surge

In 1933, the Chesapeake-Potomac Hurricane sent a 11.3-foot storm surge into the heart of Washington, DC. If a 14-foot surge were to happen today, this is what it could look like.

See page 302; http://www.nps.gov/nationalmallplan/Documents/FEIS/Volume%201/5_The_Affected_Environment.pdf

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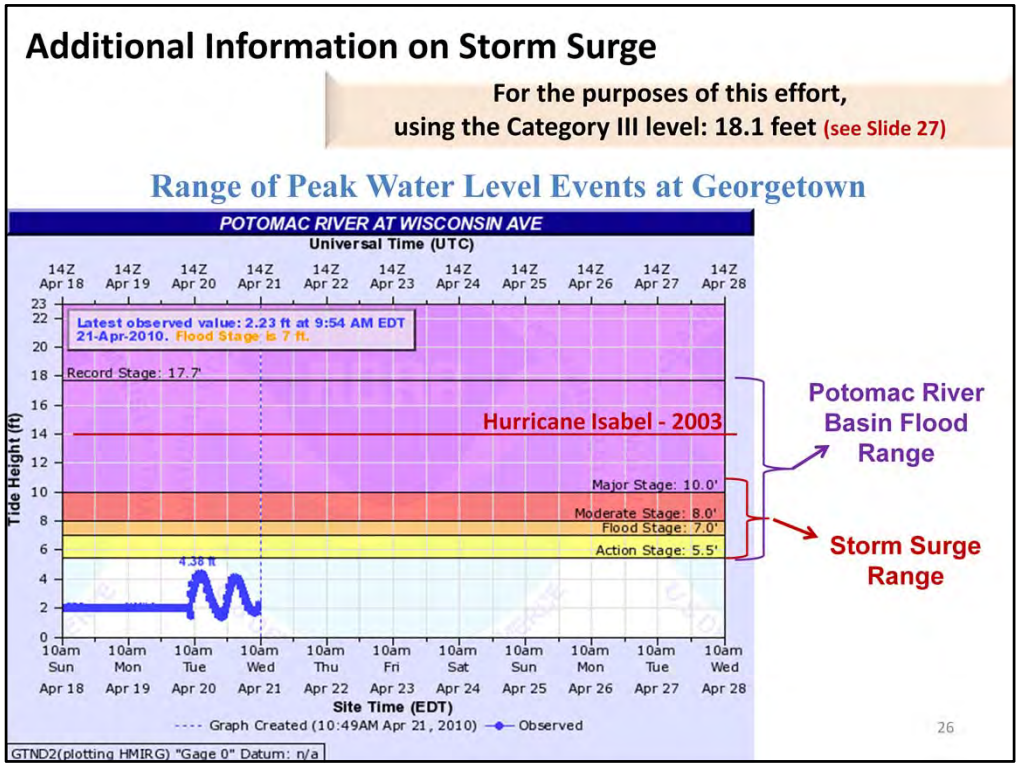
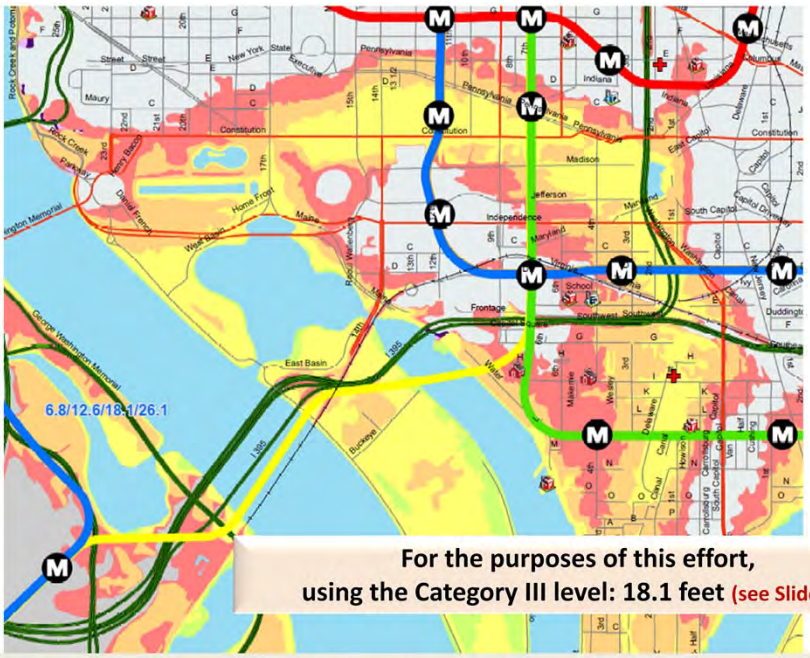
Lots of information relative to storm surge (page 1 of 3).

- This is info from National Park Service EIS and depicts impact of 14’ on DC.
- Historical storm – 1933: storm surge 11.3 feet



Lots of information relative to storm surge (page 2 of 3).

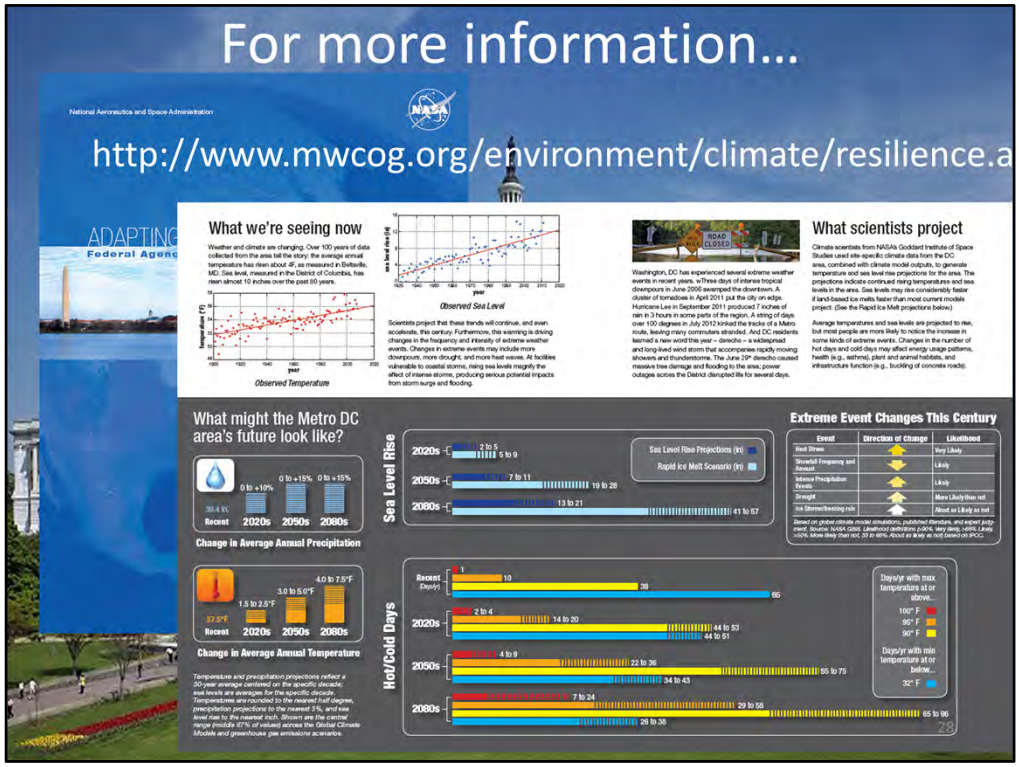
- Depicts height of Hurricane Isabel in 2003 in Georgetown – about 11 feet



FEMA Hurricane/storm surge study (2009) used NGVD. The adopted datum nowadays is NAVD88. The storm surge heights are 6.8 (green), 12.6 (yellow), 18.1 (orange) and 26.1 feet (red) (NGVD 29) for Categories I, II, III, and IV, respectively.

Lots of information relative to storm surge (page 3 of 3).

- This is a 2009 FEMA Hurricane/storm surge study with 3 different storm surge heights.
- For the purposes of this effort, we are going to use the Category III level: 18.1 feet (orange level shown on the map.)
- Let's explore our vulnerabilities for planning purposes at this level.
- Comment during the call: DC is designing their seawall at 17 feet. 14 flood plus 3 feet SLR.



From Climate Science Introduction Webinar (9/20/13).

- Cover of NASA handout and core science info

  http://www.mwcog.org/environment/climate/resilience.asp
- A NASA Climate Adaptation Mobile App with this information will be released this fall, and will be updated as new science becomes available.

What do I need to Provide?

Your Top 4 Risks – Built Systems

- **Name or type of built system**
- **Scale of impact**
- **Current and planned responses (work-arounds)**
- **Any other information you feel would be useful for 11/14 Workshop (New date!)**

Microsoft Excel template

DUE: Wednesday, 10/30 (New date!)

TO: Sarah Lynagh, Leidos

Direct Questions:
- Ann Kosmal, GSA
- Christina Hudson, Leidos

	Timeframe / Scale of Impact		
Climate Variable	**Today**	**2020s**	**2050s**
Gradual			
Sea level rise	minor	minor	moderate
Increased average precipitation	minor	minor	minor
Higher average temperature	minor	minor	minor
Extreme Events			
SLR + storm surge	major	major	major
Heavy precipitation	minor	minor	minor
Drought	minor	minor	moderate
Heat waves	minor	minor	minor

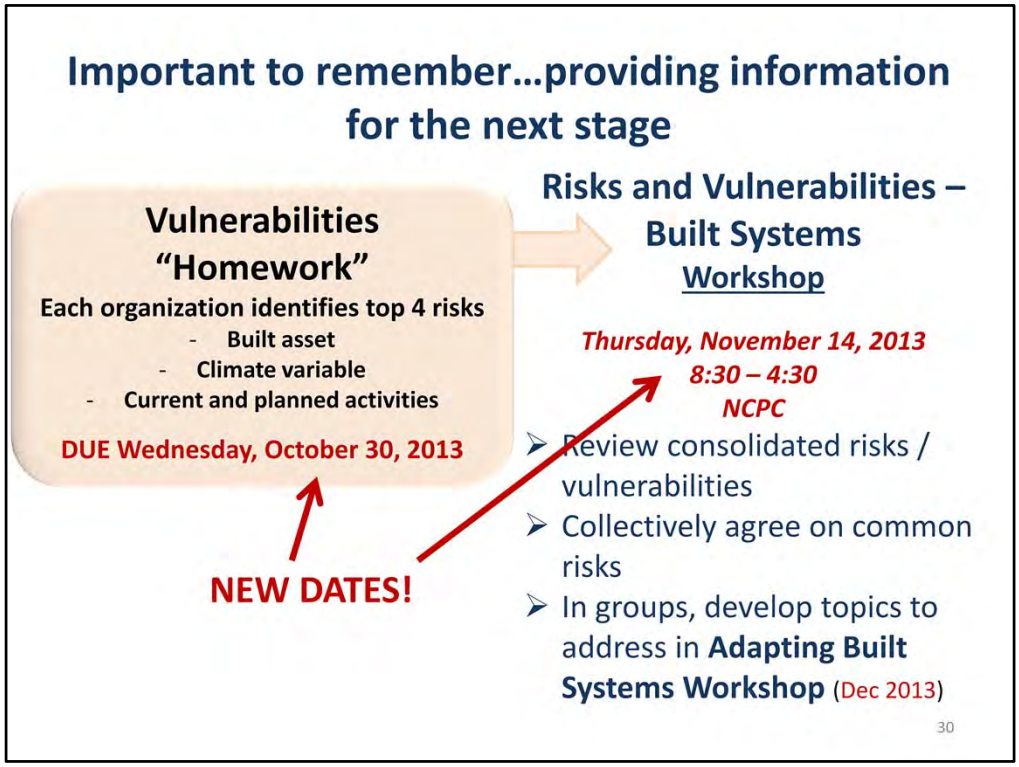
EXAMPLE

Major risk
Moderate risk
Minor risk

Derived from: NYC Special Initiative for Rebuilding and Resiliency (SIRR) http://www.nyc.gov/html/sirr/html/home/home.shtml 29

What the Homework really is
- A description of the top 4 most climate-vulnerable built systems that are critical to carrying out your organization's goals and objectives; how they are impacted; and current and planned responses.

Questions:
- How are your organization's goals & objectives vulnerable in a light of a changing climate?
- Which 4 built systems are most at risk of impeding your goals and objectives now and in the future?
- Information:
    - Name or type of built system
    - Your organization's current and planned responses (or work-arounds)
    - Any other information you feel would be useful for those at 11/14 Risks & Vulnerabilities – Built Systems - Workshop
- For each of the top 4 risks, what is the scale of the impact relative to the Gradual and Extreme Events categories listed in the example – today, in the 2020s and the 2050s. Label each minor, moderate or major.
- We'll send info to help you capture the information about your top risks.
- Given security sensitivities, you don't need to provide a specific building address, you can provide a TYPE of building.
- Contact information: located on last 2 slides.



- Once the Homework is submitted, the Core Planning Team will consolidate the information in preparation for the 11/14/13 Risk & Vulnerabilities – Built Systems - Workshop.
- During that workshop, will work together to agree on what should be the focus of the December Adapting Built Systems Workshop
    - On 11/14, once several topics/issues are chosen, workshop participants will work in smaller groups to develop the background document for each topic/issue for the December workshop – what is the 'challenge statement'? What is the issue? What is currently being done? What are the planned activities?

Our Assumptions – Range of Possibilities

- Your organization has already identified a number of DC-based risks – you need to choose Top 4 risks for Built systems
- Your organization has not done this
  - We can provide a Workbook similar to one NASA and GSA have used
  - Don't have to have all the answers to do this
- We don't need to know how you chose the Top 4
- By listing in Top 4, we know they are important to your organization

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Core Planning Team recognizes that there are a range of possibilities facing the organizations invited to this effort:

- Some may be faced with the challenge of naming only four out of the many you have already identified.
- Some may not have had the opportunity to think about your organization in the face of a changing climate. Now's your chance!
- Your organization may already have a process for identifying vulnerabilities and risks that you wish to use.
- We will post a Reference Document, "Resilience & Adaptation to Climate Risks Workbook," that some might find useful should their organization not have an existing method of identifying vulnerabilities and risks. The Workbook outlines the 8-step process utilized by both NASA and GSA during their respective workshop activities, which can be executed outside of a formal workshop setting.

The Workbook comprises several documents:

- PDF containing:
  A. Characterize Risk of Climate Variables on Systems / Assets / Capabilities section
  B. Develop Potential Adaptation Strategies section
  C. Integration & Implementation Approaches section
  D. Excel Spreadsheet used to document information from Section A – Characterize Risk

E. Example - completed Characterize Risk spreadsheet
F. Excel Spreadsheet used to document information from Section B – Adaptation Strategies
G. Example - completed Adaptation Strategies spreadsheet
H. Word document used to document information from Section C – Integration
I. Examples – completed Integration documents

- Excel spreadsheets for Sections A and B
- Word document for Section C

"Definition of Biggest Risk"?

- Up to each organization or agency
- Can be based:
  - on a time issue (something you're facing right now)
  - serious catastrophic failure sometime in the future,
  - some particular mission-critical asset
  - cultural / historical significance

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Recognition that Top 4 risks from each organization will reflect their perspective and that there are no right or wrong answers

What's going to happen next? (Updated 10/21/13)

Core Planning Team

- ❑ Send or post
  - ❑ Webinar briefing with notes
  - ❑ Excel Homework template
  - ❑ Reference Workbook
- ❑ Schedule tag ups on Wed – 10/16 and 10/23, 10-11 am

Organization and Agency Points of Contact

- ❑ Complete the Homework templates by COB Wed, **10/30,** and submit to Sarah Lynagh sarah.b.lynagh@leidos.com
- ❑ Based upon selection of your Top 4 risks, identify 2-3 participants for **11/14** Workshop (room capacity = 90)
- ❑ Submit **11/14** Workshop participant names to Sarah Lynagh, sarah.b.lynagh@leidos.com by **10/30**
- ❑ Put Workshop dates on your calendar, if you should attend

Building a Climate Resilient National Capital Region

Remember – Focus now is BUILT SYSTEMS

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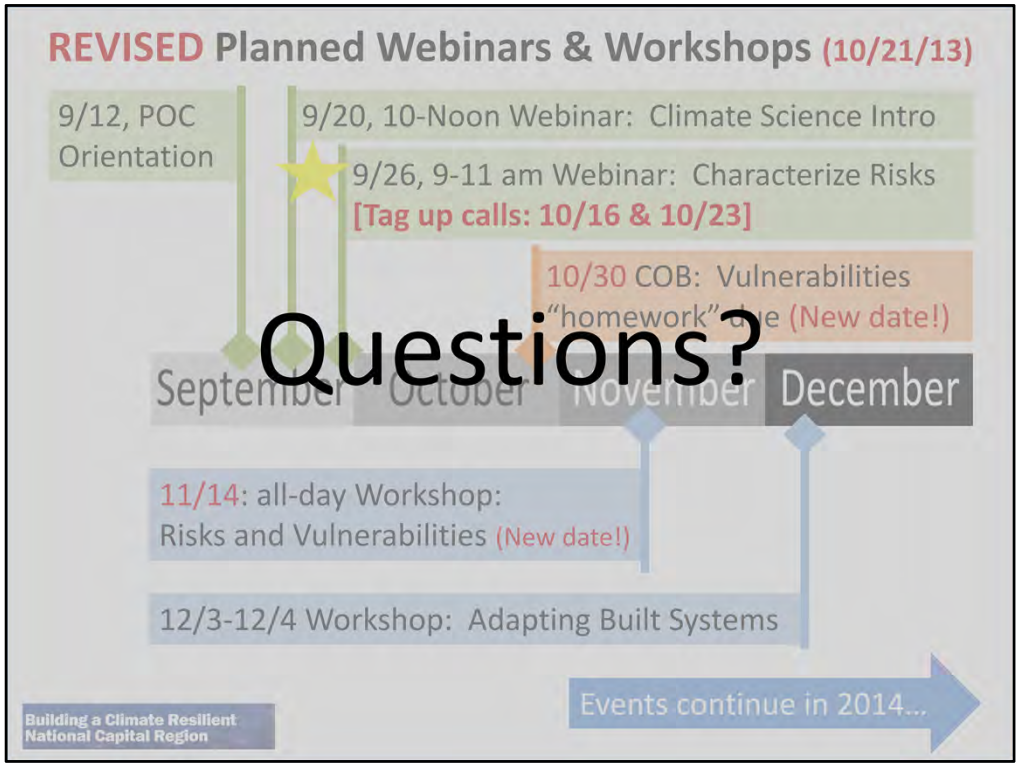
REVISED Planned Webinars & Workshops (10/21/13)
9/12, POC Orientation
9/20, 10-Noon Webinar: Climate Science Intro
9/26, 9-11 am Webinar: Characterize Risks
[Tag up calls: 10/16 & 10/23]
10/30 COB: Vulnerabilities "homework" due (New date!)
Questions?
September
October
November
December
11/14: all-day Workshop:
Risks and Vulnerabilities (New date!)
12/3-12/4 Workshop: Adapting Built Systems
Events continue in 2014…
Building a Climate Resilient National Capital Region

Core Planning Team – Contact Info

- NCPC - Amy Tarce, 202-482-7241, amy.tarce@ncpc.gov
- GSA – Ann Kosmal, 202-219-1595, ann.kosmal@gsa.gov
  Robin Snyder, 202-690-8981, robin.snyder@gsa.gov
- NASA – Kim Toufectis, 202-358-2273, Kim.W.Toufectis@nasa.gov
  Sam Higuchi, 202-358-0149, shiguchi@nasa.gov
- MWCOG – Amanda Campbell, 202-962-3324, acampbell@mwcog.org
- Smithsonian Institution – Ann Trowbridge, (202) 633-6555, TrowbridgeA@si.edu

Working with Core Planning Team – Contact Info

- Leidos (formerly SAIC) –
  - Christina Hudson, 571-282-8896, christina.c.hudson@leidos.com
  - Kim Gotwals, 919-401-4643, kimberly.b.gotwals@leidos.com
  - Sarah Lynagh, 703-676-5645, sarah.b.lynagh@leidos.com
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