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**Governor's Council on Climate Change (GC3)  
Science & Technology and Infrastructure & Land Use  
Working Groups  
MEETING MINUTES**

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**Meeting Date: October 5, 2020**  
**Meeting Time: 4:30pm-6:00pm**  
**Meeting Location: Zoom**  
[Meeting Recording](#)

**ATTENDANCE**

<b>Attendee</b>	<b>Title</b>	<b>Organization</b>	<b>Present</b>
Phone Participant 1			√
Phone Participant 2			√
Phone Participant 3			√
Phone Participant 4			√
Phone Participant 5			√
Phone Participant 6			√
Phone Participant 7			√
Adam Whelchel			√
Adelaine McCloe			√
Aicha Woods			√
Alan Poirier			√
Alec Shub			√
Alex Felson			√
Alexandra Daum			√
Allen Kratz			√
Amanda Clark			√
Amanda Kennedy			√
Amr Almghawish			√
Amy Paterson			√
Anji Seth			√
Anthony Allen			√
Avery Rowland			√
Beth Bernard			√
Bonnie Potocki			√
Brian Thompson			√
Cary Lynch			√
Cheryl Cappiali			√
Chester Arnold			√
Chris Phelps			√
Christine Kirchhoff			√
Claire Coleman			√
Dave Galt			√
David Blatt			√
David Murphy			√
deb denfeld			√
Denise Savageau			√
Diana Moody			√
Diane Duva			√
Diane Hoffman			√
Diane Lauricella			√
Diane Mas			√
Doris Johnson			√
Edith Pestana			√
Elina Griggs			√
Elizabeth Langhorne			√

## Science &amp; Technology and Infrastructure &amp; Land Use

October 5, 2020

Emily Wilson			√
emma mcgraw			√
Eric Hammerling			√
Garrett Eucalitto			√
Gwen Macdonald			√
Heather Aaron			√
Holly Drinkuth			√
Huan Ngo			√
Ieke Scully			√
James O'Donnell			√
Jean-Paul Simjouw			√
Jennifer Perry			√
Jerry Milne			√
Joanna Wozniak-Brown			√
Joey Wraithwall			√
John Barnowski			√
Kate Brennan			√
Kathy Fay			√
Katie Galt			√
Katie Lund			√
Katie O'Brien-Clayton			√
Kevin Grigg			√
Kimberly Lesay			√
Kimberly Stoner			√
Lee Cruz			√
Lee Grannis			√
lynne bonnett			√
Marcia Wilkins			√
Marie Civco			√
Mark Bolduc			√
Mary Pelletier			√
Mary-beth Hart			√
Mary-Michelle (Mikey) Hirschhoff			√
Mason Trumble			√
Matthew Fulda			√
Max Cover			√
Max Teirstein			√
Meg Smith			√
melinda tuhus			√
Melissa Spear			√
MICHAEL FERRUCCI			√
Michael Hogan			√
Milton Grew			√
Molly James			√
Nevan Carling			√
Patricia Taylor			√
Patrick Carleton			√
Patrick Comins			√
Paul Hearn			√
pete Aarrestad			√

## Science &amp; Technology and Infrastructure &amp; Land Use

October 5, 2020

Peter Hearn			√
Rachel Hiskes			√
Rachel McLoughlin			√
Ralph Jones			√
Raymond Hinchcliffe			√
Rebecca French			√
Rick Newton			√
Robert Bell			√
Roger Levien			√
Samuel Tubman			√
Sarah Shrewsbury			√
Stanley Nolan			√
State Rep David Michel			√
Stephanie Bahramian			√
Steven Wallett			√
Susan Hibbard			√
Susan Masino			√
Susan Peterson			√
Susan Quincy			√
Tamara Muruetagoiena			√
Todd Berman			√
Tony Mitchell			√
William Cavers			√
William Cordner			√
William Hamilton			√
Yaprak Onat			√
Yuliya Kalmykova			√
Zell Steever			√

## AGENDA & NOTES

### Welcome and Announcements

*Rebecca A. French, Office of Climate Planning, Department of Energy and Environmental Protection*

Rebecca French commenced the meeting at 4:30 pm and began by reviewing the agenda, which includes a brief overview of the Governor's Council on Climate Change (GC3), followed by presentations by co-chairs of the working groups, Science & Technology and Infrastructure & Land Use.

The Science and Technology working group was charged with providing scientific and technical support to the Climate Adaptation and Resiliency subcommittee and assist with translating climate modeling and data into actionable, downscaled information that can be used to incorporate into adaptation and resiliency planning processes. The Infrastructure and Land Use working group was charged with making recommendations for adapting our state's infrastructure in the areas of transportation, utilities, and buildings and integrating climate change into land use planning and policies.

Rebecca French provided a brief overview of the GC3. Overview and summary can be found [here](#). The GC3 process has been ongoing since December of 2019 and is now in a period of public review from September 22<sup>nd</sup> to October 21<sup>st</sup>. Following the conclusion of the public review period, the working groups will consider public feedback and revise their reports before sending them to the council. The final report and recommendations will be submitted to the governor by January 15, 2021.

- How else can you participate?
  - Read the working group reports, available [here](#)
  - Written comments can be sent to [deep.climatechange@ct.gov](mailto:deep.climatechange@ct.gov)

### Agenda Item(s)

#### **Presentation: Science and Technology Working Group Report**

*Jim O'Donnell, Professor of Marine Science, University of Connecticut, Executive director of the Connecticut Institute for Resilience and Climate Adaptation*

- The first recommendation of the committee is to enact a five-year review of the science of climate and the effectiveness of emissions reductions strategies

Jim O'Donnell discussed the anticipated changes in the environment as a result of climate change and the consequences for Connecticut.

- It is likely that sea level will increase by 20 inches by 2050 in Connecticut
- Jim O'Donnell illustrated how increasing sea level could result in a 10-fold increase in flooding risk (see graphs on presenter slides)
- Modest changes in mean sea level have a big impact on flood risk: An increase in the mean sea level greatly increases the frequency of flooding for a given area
- If CO<sub>2</sub> levels continue to increase at the current rate, we could see an 80-inch increase in sea level by 2100

- Average temperatures could increase by 5°F by 2050. Connecticut's temperature is rising faster than the global average.
- A coordinated global effort could help to stabilize temperatures after 2050, however, if we remain on the same track, the alternative is that the rate of change of temperature change will increase, resulting in very rapid changes
- Risk of drought will also increase
- Storms are likely to bring more precipitation. There will be less snow and more rain, but high snowfall events will be more probable.
- Hurricanes are likely to have higher winds and more rain

The Science and Technology report tries to summarize what these changes will mean for people, the economy, transportation, and health.

*Susan Masino, Professor of Applied Science, Trinity College*

We want a future that has a healthy environment, healthy people, and protects rural, suburban, and urban communities across the state.

The scope and pace of destruction is far outpacing the natural systems and resources. Today we will try to understand how we can strategically realign some of these things through thinking about science as a part of everyday life. Many of our problems are behavioral and cultural and therefore, we need to think about what we are doing and what we need to do.

The Science and Technology working group focused on impacts and tried to apply unbiased interdisciplinary science so considering evidence-based actions for our common goal of adjusting and a healthy future.

One of the core concepts that the working group looked at is "multisolving", which is a holistic strategy of trying to solve multiple issues with the main goal of climate protection.

The following are several multisolving solutions that the working group explored:

- Urban Green Infrastructure
  - Green infrastructure stores carbon, cleans air, increases biodiversity, creates networks for wildlife, and creates jobs
- Public Transportation
  - Reduces emissions and provides a community lifeline
- Energy Use
  - Reducing energy use is critical
  - Increasing energy efficiency can improve health
  - Supporting local clean energy provides a community lifeline by providing jobs and equity in education
- Natural Solutions
  - Natural solutions help to keep carbon stored on land like keeping fossil fuels in the ground
  - Proforestation
  - Green infrastructure
- Connecticut is a region with high stored carbon which is critical for biodiversity and climate mitigation
- Community Education and Action
  - Change happens locally and therefore, supporting local communities is critical

- One recommendation made in the working group report is to focus on demonstrating and quantifying multiple benefits

Even if we solve the CO<sub>2</sub> issue, it is still a problem if we do not protect the natural world as well. Science based policies have the ability to make Connecticut a great state long into the future.

### **Presentation: Infrastructure and Land Use Adaptation Report**

*Matt Fulda, Connecticut Metropolitan Council of Governments*

The vision for the working group is that climate change resilience and adaptation is an investment in Connecticut's future. The investments will improve response to acute stressors, reduce risk, and preserve assets into the future. Connecticut is responsive and flexible as science evolves and demographics shift. Our economy, environment, and quality of life thrive.

There are three subgroups that make up the Infrastructure and Land Use Adaptation working group:

- Transportation
  - Includes all facets of the transportation network (details listed on presenter slides)
  - It is important to make sure that there is a comprehensive to include all transportation operators across the state
  - Transportation has to be equitable and accessible for all Connecticut residents
- Land Use and Buildings
  - The group focused on conservation and development at all scales (state level to neighborhood level)
  - It is important to make sure that the types of materials, regulations, and coding requirements are sustainable, resilient, and adaptable to a changing climate
- Utility Infrastructure
  - Critical infrastructure necessary for the economic resilience and physical health and safety
  - It is important to recognize the interconnectedness of communications, fuel, drinking water, waste water, electricity, stormwater, and flood control

The working group focused on several climate change impacts:

- Flood impacts from sea level rise and storms
  - We need to make sure that we are resilient and adaptable to the increased frequency in flooding and storms that we expect in the future
  - This includes facilities, buildings, accessibility, evacuation, and continuity of operations
- Air Temperature
  - There are significant health impacts associated with building design
  - Heat effects on construction materials

### **Vulnerable Communities**

- The group focused on working through a lens of equity
  - The impact of climate change on vulnerable communities is the inability to adapt or improve their resilience due to economic limitations, disinvestment in their communities and historic lack of directed engagement in planning processes
  - The process included broad representation and coordination with stakeholders and partners that work, live, and engage with vulnerable communities

The working group reviewed the 2011 climate preparedness plan to evaluate which of the recommendations that came out of that plan could be carried forward into the updated plan. The concepts that they highlighted to carry over are listed on presenter slides.

#### Recommended Strategies Process

- The process of developing the recommended strategies included multiple brainstorming sessions within each working group sub-group, presentations and discussions with the Equity and Environmental Justice working group, and additions and modification in response to comments from the public
- Because of the sheer number of recommendations that came out of the process, the recommendations were divided into two bins, one which would be included in the 2020 report and a second containing recommendations that would be further developed throughout 2021

#### Recommended Strategies for 2020 (details on presenter slides)

- Establish a state-wide Climate Adaptation Implementation Committee
- Establish Connecticut Community Resilience Program
- Convene a Resilience Infrastructure Task Force
- Establish an Energy Efficiency and healthy Homes Equity Fund

#### *Transportation Sub-Group, Robert Belle, CT Department of Transportation*

- In the 2011 plan, there were not many recommendations specific to transportation. That allowed for the Transportation sub-group to make a fresh start, using the Science and Technology working group climate change projections as a guide.

#### Recommended Transportation strategies:

- Improve and coordinate statewide evacuation route planning
- Conduct vulnerability assessment on bus and rail operations and facilities, and on bicycle and pedestrian facilities. What are the potential projected problem areas that need special attention to improve their preservation and resiliency for the future?
- Identify geographically isolated communities predicted to have limited access due to future coastal and inland flooding
- Continue to pursue best available science for updating standards and guidelines used in transportation engineering design
- Create a statewide database of water control structures that restrict flow (such as culverts, flood gates, tide gates)

#### *Utility Infrastructure Sub-Group, Todd Berman, United Illuminating*

While the 2011 planning work was mostly limited to looking at water supply issues, the current sub-group took a much broader view. The group contributed one recommended strategy for the 2020 report because it is such an urgent issue to focus on. The most pressing recommendation is to update safe daily yield calculations and assess current drinking water quality measures/testing to understand and address climate change impacts. There are 18 other recommendations but is the only one submitted for the 2020 report because it requires immediate action.

#### *Breakout Sessions*



Participants of the public forum were then moved into separate breakout session rooms by Marybeth Hart, to discuss the details of the topics presented by each of the working group and sub-group teams. The breakout session themes included: Science & Technology, Infrastructure, Land Use and Buildings, and Transportation.

Breakout sessions officially concluded at 6:00 pm but the rooms were left open to accommodate additional conversation.

**NOTE:** *Identify if slides or presentations are available on GC3 web page:* [www.ct.gov/deep/gc3](http://www.ct.gov/deep/gc3)

### ***Chat Record***

16:39:58 From Rebecca French : Comments may be written into the chat at any time. We will save the chat.

16:40:30 From Rebecca French : Written comments are also accepted via email at [deep.climatechange@ct.gov](mailto:deep.climatechange@ct.gov).

16:42:58 From Rebecca French : IPCC is the International Panel on Climate Change

16:44:38 From MICHAEL FERRUCCI : I'm a Professional Forester and the Chair of the Working Group of the Yankee Division of the Society of American Foresters that produced a Position Statement "Southern New England Forest Management in an Era of Climate Change". A large group of foresters and forest scientists reviewed the literature and considered practical forest management experience to develop our statement. It will be provided in full in our written comments. I'll summarize, from my own words.

16:48:23 From Rebecca French : CIRCA is the Connecticut Institute for Resilience and Climate Adaptation - a research institute at UConn. Jim O'Donnell is the Executive Director. [circa.uconn.edu](http://circa.uconn.edu)

16:50:17 From MICHAEL FERRUCCI : Continuing: Directed to the Scient Report Forestss are much more than carbon warehouses. Reducing this important topic to promote the novel and unproven "proforestation" hypothesis does not serve the science or society. The report should mention forest reserves as one option, while also listing the ma y challenges of a reserve-only approach. Forestry strategies belong in the forest and lands sub-group, where they can be discussed in the context of all of the benefits, resources, products, and challenges of sustaining healthy forests in a changing environment. Finally, the science is so far from understanding "proforestation", much less recommending it, that to place this quirkly idea at the top of the list of recommendaitons serves only to demean the real science.

16:50:54 From Rebecca French : If you did not respond to the survey earlier today, please send a private chat to Marybeth with your choice of one of the four options: Science & Technology; Buildings and Land Use; Transportation; Utilities

16:51:19 From Rebecca French : One of the four options for break out sessions.

16:53:41 From Rebecca French : Feel free to use the chat to pose questions or comments for the presenters.

16:53:51 From MICHAEL FERRUCCI : Now speaking for myself personally I'm dismayed by the narrow range of citations that are in the report supporting this "proforestation" hypothesis. I am expecting that a number of experienced forest scientists and forest managers will provide ample peer-reviewed scientific evidence and personal experience refuting this aburd idea. I sure

hope that we can have a voice this time around, as the initial approach seemed designed serve some very narrow, pre-determined outcomes.

16:55:23 From State Rep David Michel : If we do not protect the “frontlines of defense” against the devastating impacts of climate change we are in deep trouble. Those are the marine ecosystems and more. We are passengers on this spaceship and we are losing the operators, including those maintaining our life support system. They are disappearing one after the other. IF we do not protect our biodiversity, keystone and apex species, then we really are in trouble. It should be as urgent and crucial to protect those systems responsible for carbon absorption equally to fighting the sources of the issues

16:57:02 From Rebecca French : If you joined a little late, the current presenter is Susan Masino, co-chair of the Science & Technology Working Group for the Governor's Council on Climate Change and professor at Trinity College.

16:58:29 From Denise Savageau : Agree with including the nexus between food supply, water, and energy

17:00:57 From State Rep David Michel : In the case of wind energy, it would be shooting ourselves in the foot to let the developers of renewables put profit before the preservation of our ecosystems. It works particularly well when the CLEAN techniques are also creating lots more job, as in the opportunity we could get with offshore wind. We have unique opportunities to actually develop a green new deal, protecting our future in protecting the environment and creating jobs. Hopefully we don't miss the turbine.

17:02:34 From Meg Smith : Are there any plans in the work based on these concepts? What is the timeline?

17:03:05 From Meg Smith : or are these groups merely for research/

17:03:20 From Meg Smith : ?

17:03:55 From Rebecca French : Re Meg: The Working Groups developed recommendations for the Governor's Council on Climate Change.

17:04:35 From Rebecca French : Science and Technology focused on providing an assessment of the impacts of climate change on Connecticut and also gave recommendations for research questions we need to address in Connecticut

17:06:58 From Rebecca French : To keep everyone on the same page. Susan was presenting on the findings of the Science & Technology Working Group. Matt Fulda (current presenter) is discussing the findings of the Infrastructure and Land Use Working Group in the areas of transportation, land use and buildings and utilities.

17:07:06 From Susan Masino : I apologize that I think there is a misunderstanding of the word proforestation. It is a single term for what is happening in National Parks, I was trying to keep this short.

17:09:27 From Rebecca French : All working groups were charged with integrating equity and environmental justice into their recommendations and particularly for adaptation and resilience recommendations - ensuring those recommendation prioritize vulnerable communities (those feeling the impacts of climate change first and worst)

17:10:34 From Rebecca French : In 2011 DEEP wrote its first climate adaptation plan - now nearly 10-years-old, the groups reviewed those recommendations to see if they are still relevant today.

17:12:23 From Rebecca French : All working groups for public review:  
<https://portal.ct.gov/DEEP/Climate-Change/GC3/GC3-Working-group-reports>

17:12:55 From Rebecca French : These strategies can be found in the Infrastructure and Land Use Working Group's report.

17:14:50 From Rebecca French : You will learn more about these three recommendations if you are in their break out session on land use and buildings. The report includes additional details as well.

- 17:15:46 From Rebecca French : If you have not selected your break out session yet, please send a private chat to Mary-beth Hart with your choice of one of four break out session areas: 1) Science & Technology; 2) Land Use and Buildings; 3) Transportation OR 4) Utilities
- 17:16:33 From John Barnowski : I cannot attend a breakout session.
- 17:18:58 From Lee Grannis : Where is the evacuation plan as part of the Transportaton Plan, to get people out of the affected area. This should include emergency fueling along the evacuation route. Or is this too much in the weeds at this time?
- 17:19:15 From Rebecca French : If anyone saw photos of Vermont after Irene with road washouts that occurred there - that was largely due to undersized culverts that could not handle the large volume of flood waters
- 17:19:57 From Rebecca French : Re Lee - no please add feedback like that to the chat at any time
- 17:20:42 From pete Aarrestad : Rivers move water, sediment and large woody debris. It's not just about water.
- 17:21:19 From Denise Savageau : Tidal and inland wetlands provide numerous ecosystem services including flood control and carbon sequestration. Most carbon sequestration is stored in highly organic soils associated with wetlands. The largest impact on wetlands is transportation so recommendations should coordinate with wetlands subgroup.
- 17:21:38 From Kevin Grigg : The actual plan will be developed and finalized after the recommendations are approved. Point well taken as to emergency fueling - we will make sure that this issue is addressed in the plan. Thanks for your input.
- 17:22:07 From Anthony Allen : Assessing culverts, and replacing when necessary can be an incredibly effective solution for man-made infrastructure AND the connectivity and resilience of natural systems.
- 17:24:35 From Lee Grannis : I would like to go the Transportation Room-Lee Grannis