



REDUCING COMMUNITY RISKS FROM CLIMATE CHANGE IMPACTS: DECEMBER 13, 2011 KICKOFF MEETING NOTES

Elizabeth Riggs: Introduction

- HRWC is launching this project to examine how communities within the Huron River watershed can maintain quality of life under projected climate change scenarios
- Many of the most serious impacts of climate change will manifest as changes in the hydrologic cycle
- This meeting kicks off a year-long project to explore these issues, building “climate resilient communities” by reducing vulnerabilities and risks

Dr. Jeff Andresen: Climate Trends in Michigan and the Great Lakes

- Global temperature increase of 1 degree C on average for the past 150 yrs is unusually rapid
- Warming in Michigan is happening at night and during cool weather. Winters are not as cold as they used to be.
- Frost-free season is changing as the spring warm-up is occurring 7-10 days earlier
- We are experiencing 10-15% more precipitation annually and the extreme precipitation index is up
- Snowfall amounts show an even to falling trend
- Lake Superior has warmed by 5 degrees F since the 1980s
- Plant available soil moisture in Ann Arbor (work in progress by Jeff’s student, not yet published) studied: peak of availability is happening earlier, peak dryness is happening earlier, change of seasonality underway
- 2011 top 2 extreme weather events: 1) Hurricane Irene; 2) Heat Wave (July) and increased humidity
- Change in rates of extreme temperature records; ratio in the 1950s was 1.09:1; ratio in 2000s was 2.04:1

Wendy Wilson: Exploring the Interconnections of Water, Energy and Climate

NRDC and Tetrtech report shows moderate to high water shortage index in the Huron River watershed. A GLC map of Great Lakes basin shows low flow vulnerability (moderate for the Huron River watershed).

Indicators of success (from writing tab):

- Information sources
- Stakeholder involvement

- Planning context (what plans already have been done)
- Regulatory context (e.g., high profile political support)
- Community readiness for change

How can we secure participation from upriver and downriver partners?

We could be trying to get agreement on what the likely scenario is for the watershed as an outcome.

How can we measure awareness and commitment of participants?

Dan Brown: Introduction to glisacclimate.org – a climate problem-solving environment

Sign up on glisacclimate.org to be a part of the wiki environment. GLISA is developing a database of Great Lakes library on climate change. The website is to be a collaborative discussion for researchers and practitioners

Matt Naud: Climate Change Adaptation Efforts in Ann Arbor

- Ann Arbor is doing a lot of climate work, but isn't necessarily calling it "climate" work. Decisions like how much salt to buy and how many snowplows to employ are daily decisions.
- Climate models indicate increased variability in the future
- Most decisions are 50-100 year decisions, so investments fit within climate change adaptation frame
- City reorganizations are important as opportunities to facilitate conversations with many people from multiple disciplines
- Current activities: Institute for Sustainable Communities; Climate Adaptation Leadership Academy (peer-to-peer learning environment); Land Use Planning Scenario
- Questions of concern: need to know if there will be changes in growing season (tree management); need to understand weather extremes and energy needs from high heat event
- Involved in Michigan Green Communities Network

Peer Group Discussions

Elizabeth Riggs reviewed the activities and timeline proposed for participants in the Making Climate Resilient Communities year-long process being facilitated by HRWC. Over the next several months, working groups will meet for monthly meetings to further the discussions started below.

Discussion questions for peer groups:

1. What vulnerabilities does your sector face with changing climate scenarios?
2. What additional information do you need to assess risks and vulnerabilities?
3. What would you like to receive from participating in the CRC process?
4. What support, if any, do you need from HRWC to allow you to participate in the CRC process?

Water Infrastructure

Facilitator: Wendy Wilson

Participants: Steve Manville, Washtenaw County, Public Health and Environmental Health (onsite waste water management and water supply); Jerry Hancock, Ann Arbor (stormwater and floodplain); Janis Bobrin, Washtenaw County, Water Resources Commissioner (stormwater management, infrastructure, TMDL, erosion control); Heather Rice, UM (stormwater); Laura Rubin, HRWC; Andrew Brix, Ann Arbor (energy, water and wastewater)

Sector Vulnerabilities

- Undersized infrastructure, particularly to deal with flooding. Developers want to do things as they have done them to minimize costs.
- Challenges with green infrastructure maintenance
- “Variable” versus “new normal”
- Standards of service versus cost
- Sanitary overflows/ health exposure
- Septic and wells exposure from increased groundwater levels
- Movement of contaminants, surface water supply quality
- Summer baseflow supply
- Population pressure from migration into the Great Lakes region
- Lake level maintenance
- Potential for too much winter water
- Dam safety

Information Needs

- Does the DEQ'S 10-year storm definition need to be explored, monitored, and/or corrected? For planning purposes: 10-year storm for conveyance, 100-year for storage and rate of release.
- How do other communities deal with these various problems? Specifically, how do other communities require stormwater management at the homeowner level?
- Anticipate results of rain on saturated soils
- Personnel costs and liabilities
- Water demand studies
- Potential conservation incentives
- How to communicate the costs, assess “Willingness to pay”, comparison with other places?
- Asset management
- Risk analysis, flood damage, WWTP

Working Group Needs

- Data on possible designs to meet expected patterns
- Local level data/discussion on standards and expectations
- NPDES standards lower than local practices = cleaner streams, habitat, recreation
- Climate “Adaptation” Plan
- Personal needs
 - Tight agenda for meetings
 - Climate Change Adaptation Resource Network (Heather)
 - Getting more people here from other communities: Brighton, Wixom
 - “Michigan Green Communities” for Water
 - Take information to quarterly Phase II meetings
 - Education efforts/partners?

Next Steps:

GROUP NEXT MEETING: *Set Meeting 1 for late January or early February*

Natural Infrastructure

Facilitator: David Bidwell

Participants: Ken Keeler (Office of Campus Sustainability), Dan Brown (GLISA), Jeff Plakke (MBGNA), Jim Lloyd (Six Rivers Regional Land Conservancy), Amanda add last name (Native Plant Nursery), Susan and Ollie Cameron (family foundation), Sucila Fernandez (UM-AEC, infrastructure and planning)

Sector vulnerabilities:

- species migration (plant and animal), local extinctions
- stormwater management
- water demand from neighboring states
- population pressures (immigration from other states?)
- rethink fire-dependent stewardship of lands
- cloudy days impact plant growth
- mosquitos, diseases (Lyme, etc.)
- heat island affect

Information needs:

- Engineering dilemma: need to know trends, but also need to know extremes
- What agencies deal with new problems?
- Models, as accurate as possible
- Communication tools for discussing climate change
- Where do you draw the line in terms of ecosystem changes? vs. what change is acceptable in terms of species and ecosystem shifts?
- Will inland lakes experience different impacts than the Great Lakes?

Working group goals:

- Find specific ways to contribute to the community
- Broaden the conversation, take ideology out and incorporate data into decisions

- Manage the Huron River watershed well. Connect science to decisions.
- Determine what's next and how much will it cost.
- Land conservancy perspective – use regular mailings as education tool. Climate change hadn't been included in the past, but would like to include info on what changes can be expected by those who care about nature
- Question: are there some constituents that have a bigger bone in the fight that could be more easily engaged?

Next Steps:

GROUP NEXT MEETING: set meeting 1 for beginning of February

In-Stream Flows

Facilitator: Elizabeth Riggs

Participants: Mike Saranen, dam operator for Ford Lake Dam on the Huron River in Ypsilanti Township; Matt Naud, environmental coordinator for the City of Ann Arbor and interested in dam management and impact on flow regimes; Jeff Schaeffer, fisheries biologist with the USGS Great Lakes

Sector Vulnerabilities:

- Fisheries, from cool water to warm water species; may not replace smallmouth bass fishery because there's nothing similar in that niche
- Recreation, notably fishing. Invite participation from Huron River Fly Fishing Association and AAATU
- Current understanding of macroinvertebrates will be challenged
- Reliability of stream flows to produce hydropower; how to cover costs? For example, Ford Lake spilled water to prevent NABs but lost \$14K of revenue
- Flow risk management: how to operate within safety parameters, and where are the design inadequacies for extreme weather events
- Flow instability repercussions, including how river recreation will be impacted
- Flooding
- Water quality likely will decrease and how will communities meet TMDLs and other requirements
- Aquatic invasive species will become an increasing problem

Information Needs:

- More river flow data and better coordination of flow data. Jeff suggested modeling stream flow such as with A-Finch, a USGS model, in lieu of establishing more stream flow gages to keep costs down
- Future growth of communities may mean more water withdrawals from the river and groundwater. What is the groundwater vulnerability? Where is there room to allocate to more users?
- Bibliography of existing Huron River studies

- Is there data from other similar rivers that is useful and useable to the Huron River?

Participants identified what they want to get from their participation in the climate adaptation process with HRWC and GLISA.

- Jeff seeks to make the connection in USGS's work at the Great Lakes and national level to the local level, as well as help to maintain the Huron River as a local recreation destination
- Matt anticipates this process as an opportunity to have a place to gather what we know about projected climate impacts for this area, and have better information to make decisions about city investment in its infrastructure.
- Mike wants to good information that will guide him in making decisions on which investments to make at the dam, as well as to improve dam operator communications on the Huron River.

What does this group need to move forward in the climate adaptation discussion?

- Need more people in the In-stream Flows group from upstream and downstream in order to reach critical mass and make well-informed decisions
- Jeff needs a letter from Laura Rubin that he can present to his boss stating the value of Jeff's involvement in the process

Next Steps:GROUP NEXT MEETING:

The first monthly meeting of the In-Stream Flows group will be on Wednesday, January 25, 2012 at 1:00 PM at NEW Center, North conference room.

General Next Steps

- Elizabeth and Leah will send the meeting summary to the group and facilitate the first monthly meetings of the work groups.
- Each participant commits to bringing at least one new participant to the January meeting. Elizabeth will contact invitees who did not attend the kickoff to try to secure their involvement for the rest of the process.