

## NEW JERSEY CLEAN WATER COUNCIL

July 14, 2009  
Meeting Highlights

### Location:

NJ Environmental Infrastructure Trust, 3131 Princeton Pike, Lawrenceville, NJ.

### Attendees:

**Members:** George Bakun, Bob Breslin, Stan Cach, Jim Cosgrove, Russ Furnari, Amy Goldsmith, Tony McCracken, Lou Neely, Jim Requa, Jessica Sanchez, Tony Valente, Dan Van Abs, and Ray Zabihach.

**Others:** Tom Beaver, Cindy Britton, Ben Casella, Karen Cerra, Steve Domber, Helen Heinrich, Rick Kropp, Judy Louis, Joe Mattle, Pat Mattarazzo, and Michele Putnam.

The meeting was convened by Russ Furnari at 10:05 a.m.

### APPROVAL OF JUNE'S 2009 MEETINGS HIGHLIGHTS:

June's Minutes were distributed. Dan Van Abs made the motion to approve the minutes, and Tony McCracken seconded the motion. The minutes were approved as distributed.

### OLD BUSINESS:

Russ asked Dan Van Abs to provide an update on establishing the Committee dealing with *Water Infrastructure Financing*. So far, Dan has received responses from the following who have agreed to be on the Committee:

BPU - Victor Fortkiewicz, Executive Director

AEA - Ellen Gulbinsky, Bruce Miller of Raritan Township MUA

NJWEA - Robert C. Fischer, Vice President, NJWEA, Executive Director, Bayshore RSA

NJAWWA – Robert (Bob) Brabston, Corporate Counsel with NJ American Water

League of Municipalities – Lou Neely

Howard Woods - Yes

Debbie Mans – Yes

Dan does not have representatives from the following:

NJDEP -

NJDCA -

Public Advocate -

Just a reminder that next month, in place of its regular Meeting, the CWC will be touring PSEG's nuclear facility in Salem County. The tour will take place on August 18th.

Public Hearing Topic - Climate Change - summary of points (see attached). The Committee will meet to discuss these points and refine the Public Hearing topic.

**NEW BUSINESS:**

Michele Putnam, Director of Water Supply, and her staff discussed the Water Supply Master Plan which is nearing its release. Joe Mattle presented a Slideshow on the Overview of the Water Supply Master Plan (FYI, the Powerpoint Presentation is on the CWC Website).

Dr. Judy Louis, of Policy, Planning and Science, gave a Presentation on the Private Well Testing Act Program Overview and 2008 Data Report. (FYI, the Powerpoint Presentation of the Report is on the CWC Website.)

**DEP UPDATES:**

NONE

**ANNOUNCEMENTS:**

NONE

**ADJOURNMENT:**

The meeting was adjourned at 12:05 p.m. with a motion from George Bakun. It was seconded by Bob Breslin.

**\*\* The next meeting of the Clean Water Council will be on Tuesday, September 8, 2009, beginning at 10:00 a.m., at the NJ Environmental Infrastructure Trust, Building 6, Suite 201, 3131 Princeton Pike, Lawrenceville, NJ. \*\***

# **CLIMATE CHANGE IMPACTS ON NJ WATER INFRASTRUCTURE**

## **References:**

- USEPA website <http://www.epa.gov/climatechange/> summarizes Climate Change Impacts on Water Resources
- Rutgers, Dr. Robinson, "Climate Change & New Jersey's Water Resources"
- [http://www.nj.gov/global\\_warming/initiatives/](http://www.nj.gov/global_warming/initiatives/)

## **Climate Change Impacts on Water Resources**

- Air & water temperature increases
- Changes in levels and distribution of precipitation
- Storm intensity increases
- Sea level rise
- Changes in coastal & ocean characteristics

## **Air & Water Temperature Increases**

### **Summary:**

- Average surface temperature of Earth is increasing, and at a faster rate than during the 20<sup>th</sup> century; projected increases vary
- Top 10 warmest years in the last century have all occurred since 1990
- Fresh and salt water temperatures both rising

### **Impacts:**

- Melting of snow & ice; glaciers expected to continue retreating/disappearing
- Diminishing snow pack
- Seasonal availability of drinking water (NJ, especially South NJ)
- Warmer water shifts aquatic species distribution & population (NJ)
- Increased range of invasive aquatic plants (NJ)
- Fish spawning & survival (NJ)
- Lower water dissolved oxygen levels (NJ) – increased TMDLs & WWTP aeration requirements
- More algal blooms & larger hypoxic zones (NJ)
- Declining coral reefs
- Higher evapo-transpiration (NJ)
- Increased water demand (NJ)

## **Changes in Level and Distribution of Precipitation (Snow & Rain)**

### **Summary:**

- Changes will differ regionally
- NJ precipitation is projected to increase but with more intense rain events and longer droughts

### **Impacts:**

- Longer drought periods affecting water supply plans, pricing & conservation (NJ)
- Wetland ecosystem changes (NJ)
- Increasing incidence of wildfires during extended low flow periods (NJ – Pinelands)
- Overloaded WWTPs during heavy rain events (NJ WWTPs)
- Lower lake levels affecting recreation and tourism
- Soil moisture impacts affecting agriculture
- Annual streamflow changes could affect mixing zone allocations and permit limits (NJ WWTPs)

## **Storm Intensity Increases**

### Summary:

Frequency and intensity of heavy precipitation events has increased and are projected to further increase. Precipitation events will be less frequent but more intense

### Impacts:

- More runoff erosion, sedimentation & pollution – increasing BMP & structural protection requirements
- More urban flooding affecting stormwater management design & cost, impacting property values, increasing storm sewer requirements
- More combined sewer overflows and sanitary sewer overflows (I&I)
- Larger peak wind speeds

### Alternatives:

- Rain gardens
- Green roofs
- Smart growth

## **Sea Level Rises**

### Summary:

- Created by melting snow & ice due to higher global temperatures, rate of sea rise has not yet been fully explained
- The rate of sea-level rise is also increasing
- Ocean expansion due to warmer temperature
- Melting of ice caps and glaciers

### Impacts:

- Further upstream advances of saline water affecting water intakes
- Salt water intrusion into groundwater wells
- More coastal flooding
- Wetland displacement
- Further beach erosion and loss of beaches due to infrastructure limits
- Inundation of natural systems (wetlands & shorelines) & infrastructure along coastal and estuarine areas

### Alternatives:

- Relocate low lying WWTPs
- Relocate WWTP outfalls
- Relocate or reconstruct equipment in low lying areas (e.g., lift stations)
- Change rules on septic system design/location

## **Changes in Coastal & Ocean Characteristics**

### Summary:

- Increasing atmospheric CO<sub>2</sub> results in increasing dissolved CO<sub>2</sub> in water, increasing acidity in water
- Lower dissolved oxygen levels and increases pollutant concentrations due to warmer water temperatures will result in more TMDLs, affecting WWTP infrastructure requirements
- Increased algae and microbes due to warmer water temperatures will affect drinking water quality and WTP infrastructure requirements
- Warmer air temperatures will increase water demand, affecting water supply and distribution infrastructure requirements

## **What Can Be Done**

- Reduce fossil fuel burning (coal, natural gas, oil) that creates carbon dioxide & methane
- Reforestation; decrease deforestation
- Regional Greenhouse Gas initiative (RGGI)
- NJ Clean Car Program
- Increase green requirements
- Clean energy sources for WTPs & WWTPs
- Increase methane recovery at WWTPs
- Increased energy efficiency at WTPs and WWTPs
- Improve predictive models and agreement on projections before proceeding with new requirements
- Increase incentives for voluntary water conservation and re-use
- Consider effects of future WWTP requirements (denitrification and membrane treatment) on energy use