

The items listed below are for consideration and discussion, not final recommendations. The intent is for them to be vetted by stakeholders, municipalities and the public to identify the actions that will end up in the region's Climate Action and Adaptation Plan (CAAP).



CLEAN HEALTHY WATER

1/21/21

- ✦ *PA has experienced a 55% increase in heavy precipitation events (the top 1% of rainy days) from 1958 to 2016. {source: 4th National Climate Assessment}*
- ✦ *Water is an underlying connection for healthy ecosystems*
- ✦ *Co-Benefits: healthy water = healthy community, improved resiliency, reduced infrastructure costs*

1. Manage flooding and reduce erosion impacts on infrastructure

- A.1 Manage upstream flows to reduce downstream flood risk and minimize sediment
 - Use green infrastructure such as bioswales, permeable pavement, other pervious surfaces to t entry into creeks from trails and roads.
 - Preserve and improve ecological buffers (wetlands, riparian buffers)
 - habitat protection and restoration
- B.1 Continue to identify high-priority conservation lands to enhance flood mitigation in partnership with ClearWater Conservancy
- C.1 Evaluate the need for floodplain restoration in the Centre Region (if needed, the US Army Corp provides technical assistance)
- D.1 Identify road access issues related to flooding – electrical distribution / energy systems, emergency management
 - Define flooding and identify flood locations and the impacts expected from climate change.
 - Regional planning exercise, identify transmission lines, substations
 - arteries for evacuation routes – beware of streetscapes making it more congested for evac
- E.1 Determine if there is a need for a regional stormwater assessment – providing modeling for future conditions and recommendations
- F.1 Develop recommendations for culvert / pipe sizing, downstream pipe and retention needs
 - Determine needed resizing of storm water collection systems to accommodate more frequent and intense rain events

- G.1 Support and align with the efforts implementing MS4 best practices
 - Adjustments to BMP selection and location, as well as changes to modeling and policy may be needed to mitigate the effects of changes in extremes.
 - Re-evaluate our BMPS and make sure climate-vulnerable BMPs will be required. Consider monitoring and maintenance needs.
- H.1 Improve information used to manage stormwater and flood events
 - Create flood awareness education (i.e Selingsgrove)
 - Offer readiness and adaptation workshops for residents and businesses
 - Educating residents on what to expect in intense rain events and expected flooding, and help residents prepare for the changing climate
 - Develop resiliency advisors (activate volunteers under Centre Region Ready)
- I.1 Identify hazardous material sites in flood risk area (County HMP)
- J.1 Educate community on all aspects of landscaping from the selection of plants to soil preparation and the installation of irrigation systems should be designed to reduce water demand, retain runoff, decrease flooding, and recharge groundwater.
- K.1 Reduce property damage from stormwater and flooding
 - Identify vulnerable neighborhoods/areas and determine if need tougher building codes and restrictions
 - Make homes more energy efficient to shelter in place longer
 - Determine long term flood remediation solutions

2. Grow and maintain a healthy tree canopy (urban, suburban, rural, forest)

- A.2 Develop a Centre Region tree strategy
 - Include an urban tree canopy goal
- B.2 Update or develop the municipal street tree guide and landscape design standards for new development for tree species appropriate for a future local climate.
- C.2 Update and/or consider a tree preservation ordinance
- D.2 Develop a strategy/best practices for preventing and handling tree disease and pest damage
 - Include Rothrock and Scotia (DCNR, etc) partners
 - Educate about tree trimming best practices
- E.2 Define a goal of trees to be planted within a defined time period

- F.2 Promote climate adaptation friendly landscaping through education, outreach, and technical assistance
 - Educate public about the benefits of native plants, trees and shrubs
 - Develop training programs to educate local nurseries, landscapers and municipal personnel to sell and utilize more native plants, trees and shrubs
- G.2 Identify areas where climate adaptation friendly landscaping is a priority and determine incentives for landowners.

3. Protect and conserve community water resources

- A.3 Evaluate incentives for practices that reduce use of potable water for non-potable purposes and/or recharge groundwater.
 - Consider reviewing current ordinances for where they may need to be improved.
 - UAJA Beneficial Reuse Water
- B.3 Introduce a system whereby when a new building is permitted, a conversation is triggered around the introduction of feasible new technologies that reduce water and wastewater.
 - Stormwater ordinances currently promote low impact development methods that include technologies such as rain harvesting and use.
- C.3 Expand water conservation outreach and incentive programs for residents and businesses.
- D.3 Evaluate the potential for installation of rainwater collection systems at public facilities for appropriate uses and investigate opportunities for water reuse at existing and new public facilities and properties.
- E.3 Update municipal landscaping standards for reducing water consumption and chemical use.
 - Reduce water use in Parks and landscaping
 - Reduce turf and grass in public landscaped area, use native turf and grass when applicable
 - Use compost, biosolids and mulch
 - Use non-toxic fertilizers to reduce contaminates
- F.3 Promote drought-tolerant landscaping through education, outreach, and technical assistance
 - Educate public about installing rain gardens and rain barrels
 - Develop a training program to educate local landscapers and municipal personnel on practices that reduce the use of water and toxic pesticides.

- F.3 Create a water efficient demonstration garden that includes native and drought tolerant plants and requires low volume mulch, irrigation and other water saving features.
- G.3 Implement a lawn buy-back program for residents who convert sod or grass to drought-tolerant landscaping.
- H.3 Promote water saving program to multi-family units / rentals (connect with energy efficiency)

4. Protect ecosystems and promote ecosystem resilience

- A.4 Explore how best to protect important areas inside COG for the long-term, such as remnant spring, wetland, and late successional forest habitats, through improved public lands management/ownership and promotion of conservation easements and private open spaces.
- B.4 Manage forests to retain biodiversity, resilience, and ecosystem function and services in the face of climate change. Use best available science to inform fire management and planning to manage ecosystem health, community safety, and carbon storage.
- C.4 Develop a pest management strategy (applies to trees, public health and agriculture)
- D.4 Provide education and awareness about Lymes disease and mosquito borne illnesses
 - Partner with Visitor center, CRPR – determine (potential) impact on tourism