

Natural Solutions Tool Technical Advisory Team Meeting

Aug 4th, 2022

CHICAGO CALUMET RIVER
WATERSHED COUNCIL



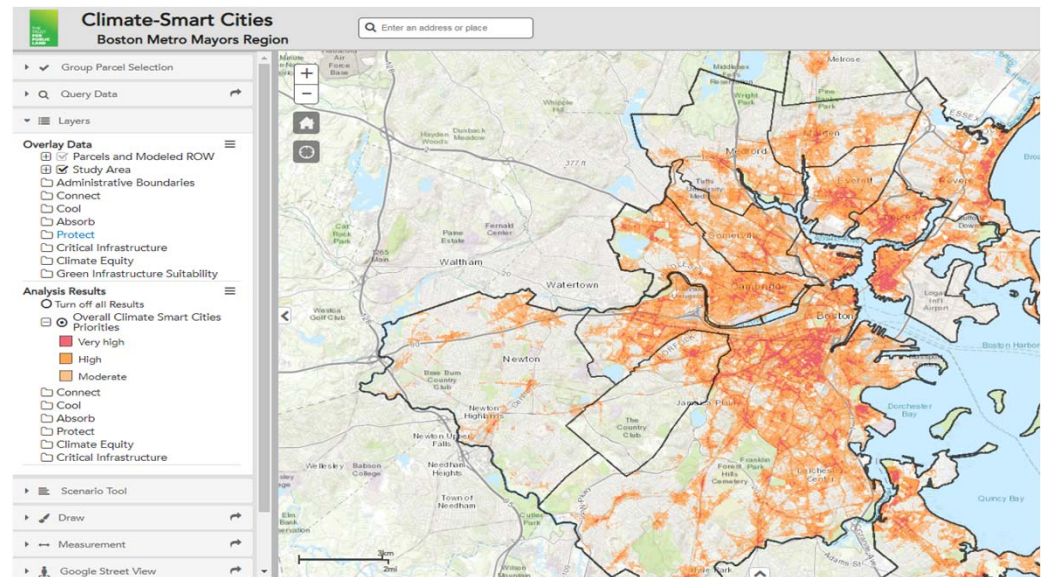
Connecting everyone to the outdoors™

Agenda

- **2:00:** Welcome and Introductions
- **2:05:** Project recap and objectives
- **2:10:** Health review
- **2:25:** Background and example water systems model
- **2:30:** Resilient water systems modeling feedback session
 - Review criteria results
 - Confirm data sources
- **3:15:** Wrap up and next steps
 - Weighting of criteria
 - Biodiversity
- **3:30:** Meeting adjourns

What are we co-creating?

Natural Solutions Tool will identify and prioritize - at the regional, neighborhood, and parcel scale - the top locations for multi-benefit nature-based solutions.



Technical Advisory Team (TAT)

Purpose:

Provide expert review and advice regarding design, data input, rationale, outcomes, and mapping.

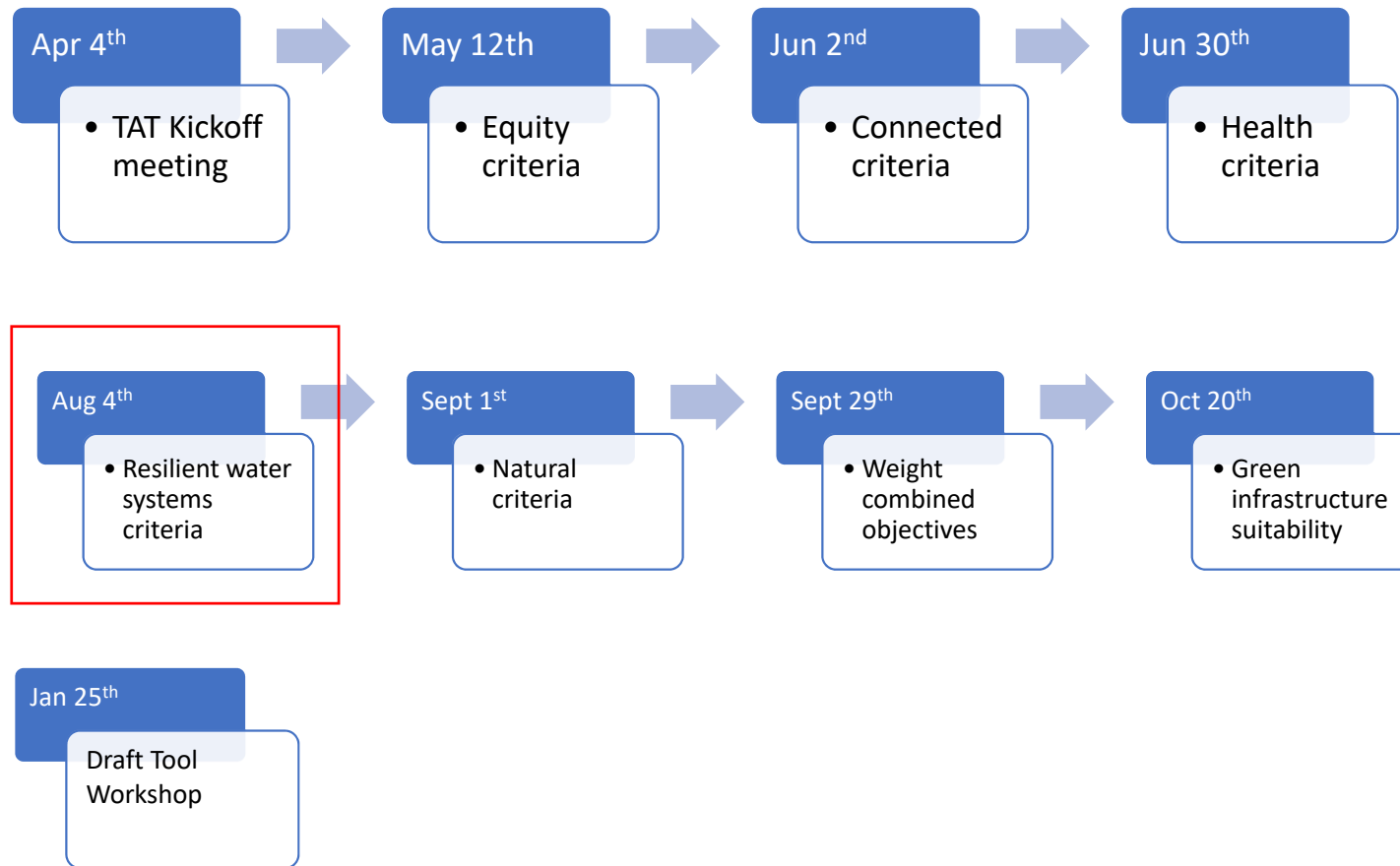
Responsibilities:

- Identify most appropriate criteria.
- Recommend best available data sources.
- Verify the completeness and appropriateness of model criteria.
- Help ensure that defensible science is used for all models and assumptions.
- Review input data and model results for accuracy and currency.
- Weight the model outputs to create “priority” results

Modeling objectives

- **Healthy communities:** Address existing environmental conditions, such as urban heat islands and air pollution, which cause or exacerbate human health inequities.
- **Equitable:** Guide investments to areas of the greatest need, including economically disconnected and Black and Brown communities where individuals disproportionately suffer from environmental stressors and are denied environmental benefits.
- **Connected:** Use trails and greenways to connect people between residential areas, parks, and natural areas.
- **Resilient water systems:** Promote the natural absorption of rainfall to increase resiliency, improve water quality, and reduce community flooding.
- **Natural:** Protect or restore living landscapes to expand biodiversity and support communities of native species, especially those that are threatened and endangered.

Schedule



Healthy Communities Update

- Added air quality metrics
 - PM 2.5 – Marynia Kolak, U of Chicago
 - Ozone – EPA Office of Air and Radiation
 - Diesel Particulate Matter – EPA Hazardous Air Pollutants Data
- Health-related quality of life index
 - Mental Health (already included)
 - Physical Health (added)
- Accessibility data
 - Included disability measure from EJScreen in equity
 - Working to evaluate accessibility data from forest districts as potential overlay
- Weighting Survey – shared after today's session

Today's Resilient Water Systems Session

- Background
 - Role of green infrastructure/nature-based solutions
 - Absorb
 - Capture, filter, and reduce stormwater runoff
 - Reduce burden on combined sewers and reduce CSOs
 - Protect and Improve
 - Store and slow floodwaters
 - Improve water quality
 - Improve resiliency to climate change
- Purpose of session:
 - Provide feedback on modeled priorities
 - Gain understanding necessary to weight criteria to create a “stacked priority” results

Resilient Water Systems - Absorb

Criteria	Methods	Source
Flow Accumulation	Topographic Wetness Index.	CMAP
Estimated Runoff	Estimated runoff associated during a 10-year, two-hour storm event. This event is connected to common local drainage system infrastructure design standards.	SSURGO CMAP LU NRCS
Combined Sewer Service Area	Identify locations that are more susceptible to flooding given the combination of sanitary and storm sewers. Produced by CMAP in collaboration with MWRD and local communities.	CMAP
Impervious surface by watershed (%)	Different levels of impervious surface cover which contributes to riverine flooding. Average impervious surface cover was determined for watersheds supplied.	NLCD 2019/CMAP
Flood susceptibility	Prioritizes developed areas that are susceptible to floodplain or non-floodplain flooding.	CMAP

Resilient Water Systems – Protect and Improve

Criteria	Methods	Source
Current Flood Zones	This model assigns very high priority to active floodways, high priority to the 100-year flood zone, and moderate priority to the 500-year flood zone and areas protected by levees.	2022 FEMA
Wetlands, riparian areas, shoreline	High priority is assigned to wetlands, 200' buffers of wetlands, and a 200' buffer of Lake Michigan.	NWI; Lake County

Biodiversity

Criteria	Data Source	Definitions
Corridors	Green Infrastructure Vision 2.3	Corridors for ecological hubs
Imperiled Species Richness	NatureServe	Modeled richness of ESA and imperiled species
Core patches	Green Infrastructure Vision 2.3	Core areas for ecological hubs