



RESILIENT NJ

RESILIENT RARITAN RIVER AND BAY COMMUNITIES

APPENDIX O:

ADDITIONAL CLIMATE HAZARDS DRAFT TOOLKIT

August 12, 2022

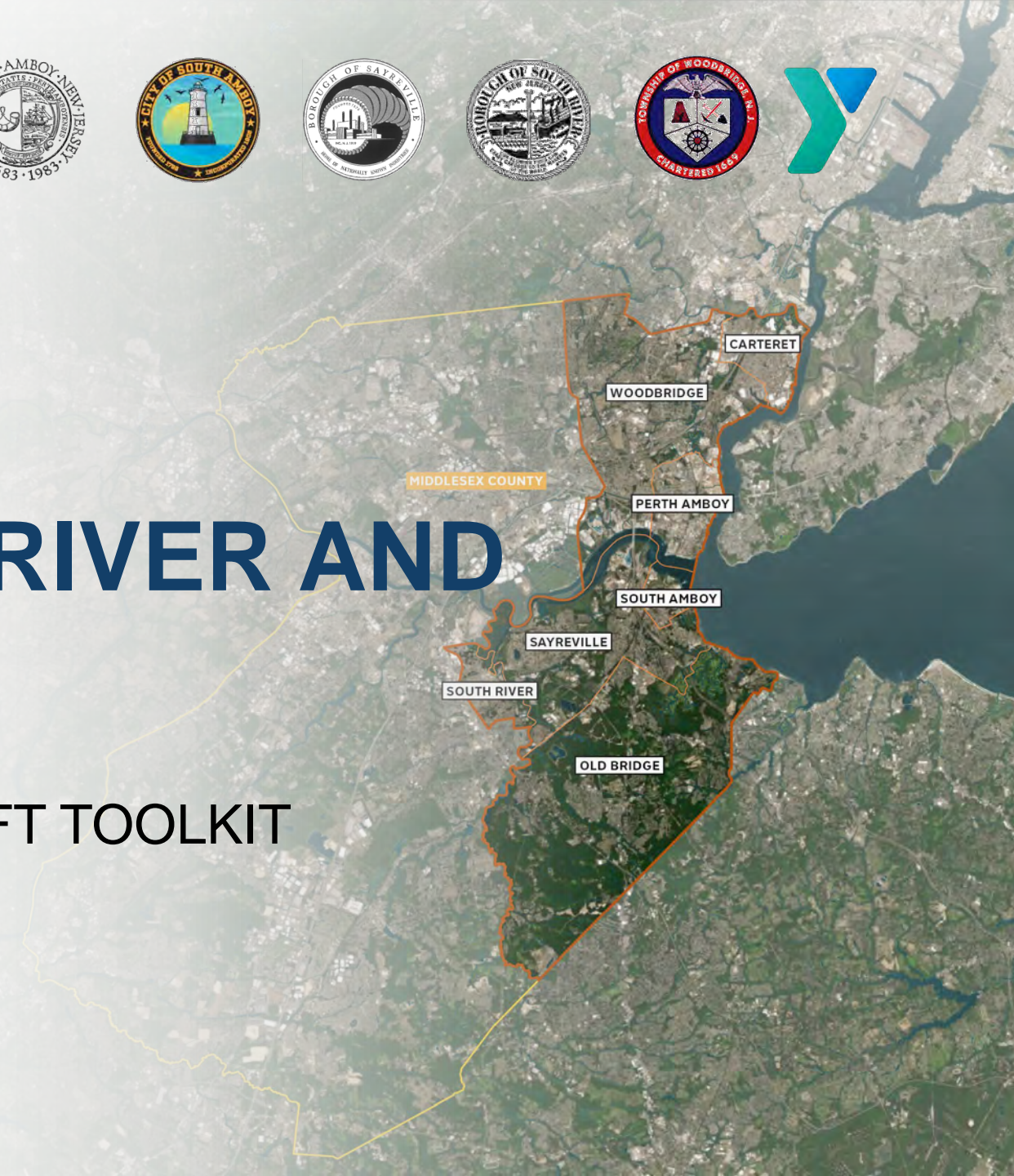


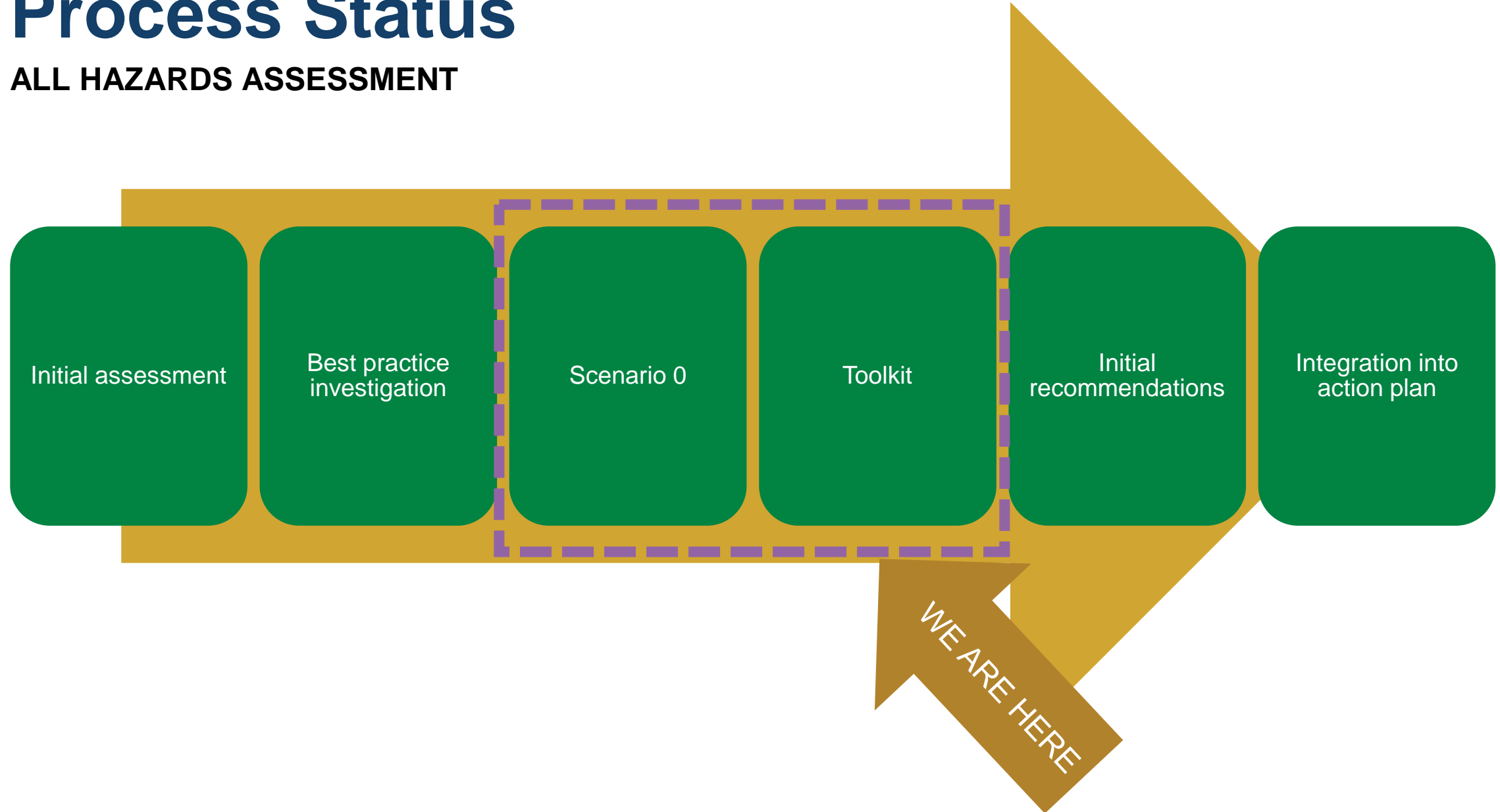
Table of Contents

Introductory Slides	p. 3-5
Social Vulnerability	p. 6-9
Extreme Heat	p. 10-17
Air Quality	p. 18-25
Drought & Water Supply	p. 26-29
Wildfire Risk	p. 30-34
Groundwater Rise	p. 35-40
Severe Weather	p. 41-43
Ocean Acidification	p. 44-46
Invasive Species & Vector-Borne Illness.....	p. 47-48

Each hazard's section includes projections and impacts. A toolkit of approaches to address these hazards has been distributed separately

Process Status

ALL HAZARDS ASSESSMENT



Legend

Hazards



Scale of Implementation



Co-Benefits



Level of Effort

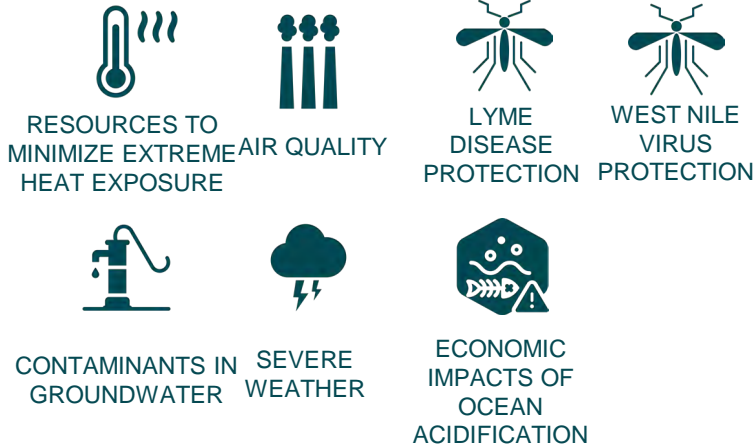




Action – Develop and Distribute Accessible Information & Educational Materials

Tools

- Multilingual outreach and education campaign designed to reach as many communities as possible (especially environmental justice communities) focused on public health risks and mitigation options associated with:



- Start a drought response outreach program with detailed guidelines (e.g., California Drought Response Outreach Program for Schools (DROPS))

Existing Official Efforts

- The NJ Water Savers program supports comprehensive public education about water conservation, efficient landscaping and irrigation practices, home water audits and indoor water saving techniques, and appropriate school curricula materials
- The New Jersey Watershed Ambassadors Program is a community-oriented AmeriCorps program that raises awareness on water-related issues
- The Lower Raritan Watershed Partnership (LRWP) supports education and outreach on environmental issues including water supply/quality

Scale of Implementation




Co-Benefits








Action – Invest in Community Engagement to Understand Local Needs

Tools

 ● Implement a public health hotline system for extreme heat to alert public health officials of high-risk or distressed individuals, tied to public programs to assist with residential heat mitigation

 ● Invest in comprehensive community engagement to understand where long-term and “invisible” health effects of pollution are already taking effect. Based on this, identify high-priority areas for immediate intervention

 ● Host the National Weather Service SKYWARN Storm Spotter training
● Work with teachers to help educate children on the risks of severe weather

 ● Determine areas high in Lyme contraction and convert them into “ticksapes,” areas less livable for tick communities, while accounting for potential negative ecological, stormwater, or urban heat island side effects. Some options to explore include keeping areas mowed and trimmed at edges, repairing stone walls and sealing cracks, keeping firewood piles away from frequently traveled areas, and using mulch or stone to create borders

Scale of Implementation



● Conduct community engagement with agricultural producers and communities that depend on marine species for their livelihoods to understand future needs and localized social and economic impacts of:



OCEAN ACIDIFICATION



CHANGES TO WATER SUPPLY LEVELS AND PROJECTED FUTURE DEMAND

Existing Official Efforts

- The NJDEP Office of Environmental Justice runs the Community Collaborative Initiative (CCI), a place-based partnership that works closely with local communities on a variety of environmental issues.

Co-Benefits



EDUCATIONAL



RARITAN RIVER AND BAY COMMUNITIES



Action – Build Partnerships & Establish Working Groups for Collective Action

Tools

- Establish municipal-level working groups to advance specific actions related to:



EXTREME HEAT AND URBAN HEAT ISLANDS



GROUND OZONE/AEROSOL HEALTH RISKS



- Coordinate with the USDA to provide technical and financial assistance to farmers and ranchers, to monitor and cope with drought, and implement conservation practices
- Partner with the American Water Works Association (AWWA) to explore statewide industry-standard approaches to water conservation



- Engage communities in the National Groundwater Monitoring Network to maintain and better understand groundwater systems



- Build partnerships with the research and academic community to support statewide ocean acidification initiatives



- Coordinate training within communities to create a local career-pipeline for foresters and fire management workers

Existing Official Efforts

- New Jersey Sea Grant and NOAA Ocean Acidification Program (OAP) partnership prioritizes and invests in regional ocean/coastal acidification research
- The Lower Raritan Watershed Partnership (LRWP) conducts education and outreach, water quality monitoring (civic science), and watershed restoration in partnership with the South River Green Team and Sayreville Environmental Commission
- Perth Amboy SWIM (Stormwater Infrastructure Management) with Rutgers University Cooperative Extension

Scale of Implementation



NEIGHBORHOOD



MUNICIPALITY



REGION



STATE

Co-Benefits



EDUCATIONAL



RARITAN RIVER AND BAY COMMUNITIES



Action – Invest in Ecosystem-Based Adaptation Projects to Address Multiple Climate Hazards

Tools

- Expand urban green space to:
 - Address environmental justice issues
 - Improve community health



DECREASE SURFACE TEMPERATURES



AMELIORATE POOR AIR QUALITY



MITIGATE FLASH FLOODING

- Implement watershed-based management habitat restoration, sustainable agroforestry practices, and planting of native species to:



PROTECT WATER SOURCES, IMPROVE GROUNDWATER RECHARGE AND QUALITY



DECREASE FOREST FIRE RISK

- Large-scale forest stand improvement (FSI) projects including enhancing native habitats, removal of additional brush/debris/dead leaves, tick tubes, and monitored localized burnings



MINIMIZE TICK PRESENCE & REMOVE INVASIVE SPECIES



REDUCE WILDFIRE FUEL AND INCREASE FOREST HEALTH



- Implement integrated water resources management (IWRM) practices in future water supply infrastructure, such as conjunctive seasonal use of surface water and groundwater



- Maintain surface water wetlands and lakes to decrease contaminated recharge



- Large-scale projects and initiatives to conserve and protect marine life vulnerable to ocean acidification

Existing Official Efforts

- NJ National Resources Conservation Service (NRCS) offers financial and technical assistance to landowners for FSI projects
- NJDEP Green Acres Program conducts land acquisitions as well as loans/grants to nonprofits for acquisition and conservation purposes
- Middlesex County Open Space Trust Fund supported by a special tax levy
- 2015 Old Bridge Impervious Cover Reduction Action Plan
- 2015 Sayreville Impervious Cover Assessment
- Perth Amboy Green Infrastructure Program SWIM partnership with Rutgers
- South River Ecosystem Restoration and Flood Resiliency Enhancement project

Scale of Implementation



NEIGHBORHOOD



MUNICIPALITY



REGION



STATE

Co-Benefits



EDUCATIONAL



RECREATIONAL



ECOLOGICAL



RARITAN RIVER AND BAY COMMUNITIES



Action – Site-Specific Plans for Prioritized Aging Infrastructure and Hazardous Sites

Tools

- Conduct a comprehensive vulnerability assessment of:



ELECTRICAL, TRANSPORTATION, WATER, AND CONVEYANCE INFRASTRUCTURE TO HEAT STRESS



WATER MAIN NETWORKS FOR VULNERABILITIES AND BREAKAGES



HAZARDOUS WASTE SITES AND NEED FOR REMEDIATION OF CONTAMINATED PLUMES THROUGH FULL OR PARTIAL SOIL REMOVAL



- Prioritize capital improvement projects to replace and/or renew deteriorating and inefficient pipelines and supply assets



- Use best management and practices and monitor land in wellhead protection areas for expenditure of contaminants



- Remove combustible material from sites during building processes and create “defensible spaces” around buildings



- Increase open, lit spaces to discourage tick community growth

Existing Official Efforts

- NJDEP recently launched a Water Infrastructure Investment Plan (WIIP) to fund water-related capital improvement and green infrastructure projects, including through NJ Water Bank-issued green bonds
- NJDEP’s Capacity Development (CapDev) program is specifically designed to identify and address water systems with technical, managerial, or financial deficits
- NJDEP Office of Environmental Justice’s Community Collaborative Initiative (CCI) works to remediate brownfield sites

Scale of Implementation



SITE-SPECIFIC



MUNICIPALITY

Co-Benefits



ECONOMIC



ECOLOGICAL



RARITAN RIVER AND BAY COMMUNITIES



Action – Enforce Existing Regulations and Pursue Higher Standards

Tools

- Ensure all municipalities and the state are aspiring to or in line with federal and international higher standards, including:



- 2021 federal U.S. Department of Labor Occupational Safety and Health Administration (OSHA) standards, including inspection guidance for heat-related hazards, in line with the National Emphasis Program (NEP) on heat inspections (effective April 2022)
- 2021 International Energy Conservation Code (IECC) on energy efficiency and performance as well as spot-ventilation, isolation, and insulation of electrical and mechanical heat systems



- Federal EPA air quality standards
- World Health Organization (WHO) Global Air Quality Guidelines



- 2018 International Residential and Plumbing Codes water conservation and efficiency standards
- 2018 International Green Construction Code water conservation and efficiency standards

Scale of Implementation



MUNICIPALITY



STATE

- Establish new regulations and ordinances



- Require new public or publicly-funded buildings and facilities (such as transportation terminals or bus stops) to include outdoor heat mitigation features such as canopy cover or photovoltaic (PV) shade canopies, water-based cooling stations, or cool pavements
- Implement load restrictions for older roads, bridges, and rail to reduce traffic on vulnerable transportation infrastructure which might experience material stress



- Conservation subdivision ordinances to ensure water-efficient landscaping, e.g., requiring retainment of wooded areas or requiring a certain percentage of low water-use plants be used in design
- Adopt statewide regulatory amendments needed to require American Water Works Association (AWWA) water loss audits and meet other benchmarks
- Streamline SOPs and processes to obtain a Water Allocation Permit for Reclaimed Water for Beneficial Reuse (RWBR)
- Mandate routine water supply asset condition assessments



- Expand Groundwater Quality Standards to include a broader list of contaminants
- Stricter zoning laws to create overlay zones that protect any water within the 1- 5- or 10- year time of travel zones



- Require tougher regulations on homes, and restrict development in fire-prone areas to decrease areas referred to as “Wildland Urban Interfaces”

Co-Benefits



ECOLOGICAL

Existing State Standards to Enforce:

- 2021 NJ Stormwater Rule that requires municipalities to update their Stormwater Control Ordinances (SCOs) to require green infrastructure be included with new development. Model ordinances are provided
- State Emission Statement rule which establishes regulations for the annual reporting of air contaminant emissions from stationary sources to help with the monitoring of the state's progress toward the mandatory emissions reduction protocols
- NJ Air Quality State Implementation Plan (NJ) regulations
- New Jersey's existing statewide water quality standards, assessments, monitoring, and watershed-based plans and programs to reduce total maximum daily loads
- Enforce landlord regulations for provision of window and door screen protections to tenants (mosquito protection)
- Regulations on design of water conveyance and holding structures to minimize potential for mosquito habitats



RARITAN RIVER AND BAY COMMUNITIES



Action – Enhance Regional Planning and Coordination

Tools

- Expand regional coordination to collaborate on:



FIRE PROTECTION IN NEW JERSEY AND FIRE-PRONE AREAS IN SURROUNDING STATES



- PROGRAMS ASSOCIATED WITH RECLAIMED WATER FOR BENEFICIAL REUSE (RWBR)
- DEVELOPMENT OF A REGIONAL DROUGHT EARLY WARNING SYSTEM (DEWS) THAT INCLUDES NJ



- UPDATED STRATEGIC MANAGEMENT PLAN FOR INVASIVE SPECIES REFLECTING BEST-AVAILABLE DATA ON CLIMATE CHANGE-RELATED IMPACTS
- CREATE INTEGRATED MOSQUITO MANAGEMENT (IMM) PLANS INCLUDING SURVEILLANCE, REMOVAL OF LARVAE AND PUPAE, AND MONITORING CONTROL SYSTEMS TO MITIGATE RISK OF OUTBREAKS



- Delineate wellhead protection areas across the region to determine land uses influencing groundwater and create a contaminant source inventory



- Consider making New Jersey a reclamation state to allow state and regional coordination around federally-funded water supply management infrastructure projects



IDENTIFY KEY STAKEHOLDERS AND ADVANCE OCEAN ACIDIFICATION INITIATIVES



REGIONAL GOALS TO SUPPORT LOCAL PLANNING FOR BETTER, ACCESSIBLE, EQUITABLE PUBLIC AND MULTI-MODAL TRANSPORTATION INFRASTRUCTURE.

Existing Official Efforts

- 2017-2022 New Jersey Water Supply Plan
- 2015 New Jersey Energy Master Plan to improve resiliency of energy infrastructure
- Lower Raritan-Middlesex County Water Resources Association supports watershed management

Scale of Implementation



REGION



STATE

Co-Benefits



ECONOMIC



RECREATIONAL



RARITAN RIVER AND BAY COMMUNITIES



Action – Incentivize Private Actors to Implement Retrofits and Sustainable Practices

Tools

- Explore implementing incentives programs to:



INSTALL NONCOMBUSTIBLE SCREENS OVER VENTS AND SAFE STORAGE PROPANE TANKS IN HOMES. REMOVE COMBUSTIBLE MATERIALS FROM SITES



ENCOURAGE STRUCTURAL WATER CONSERVATION RETROFITS, WATER AUDITS, LOW-FLOW PLUMBING RETROFITS AND EFFICIENT APPLIANCES, AND LIMITED IRRIGABLE ACREAGE



ENCOURAGE WIDESPREAD PROPERTY RETROFITS, NEW CONSTRUCTION, AND LANDSCAPING FEATURES WITH HEAT-MITIGATING STRATEGIES SUCH AS THE NYC GREEN ROOF TAX ABATEMENT



- REDUCE PRIVATE CAR OWNER VEHICULAR EMISSIONS
- EXPLORE PUBLIC-PRIVATE PARTNERSHIPS TO START OR EXPAND BIKE SHARE PROGRAMS



- Incentivize hazardous site remediation efforts that include elimination of stagnant water sources and/or maintenance/drainage of surface water to prevent mosquito growth
- Explore cost-share programs and technical assistance programs to landowners to undertake forest and wildlife improvement practices

Existing Official Efforts

- NJ Water Savers: drinking water conservation pilot program with residents and industries throughout New Jersey
- NJDEP’s Residential Rainwater Harvesting: Provides tools to community members to harvest rainwater for use.
- Rutgers Water Resources Program: State-wide grant program tackling New Jersey’s water conservation challenges

Scale of Implementation



REGION



STATE

Co-Benefits



ECONOMIC



RECREATIONAL



RARITAN RIVER AND BAY COMMUNITIES



Action – Undertake Robust Monitoring and Modeling Efforts Using Industry-Standard Technology

Tools

- Use community science tools to forecast and monitor risk and impacts at a localized scale, tied to community alert systems and other resources:



EXTREME HEAT AND URBAN HEAT ISLAND



GROUND OZONE/AEROSOL HEALTH RISKS

- Integrate best-available data on future climate, population, and land use trends into ongoing monitoring and modeling efforts using cutting-edge technology:



AIR QUALITY MONITORING



WATER RESERVOIR MODELING AND DROUGHT MONITORING



HIGH RESOLUTION RAPID REFRESH TO FORECAST ON SMALLER GRID

- Conduct physical and financial audits to collect data on resource consumption:



WATER LOSSES AND EFFICIENCY

- Conduct additional modeling to address critical data gaps:



RISING GROUNDWATER LEVELS AND CONTAMINANT SOURCE/TRAJECTORY



PREDICT CHANGES IN OCEAN CARBON CYCLES, OA MONITORING



FUTURE RISK PROJECTIONS AND MODELING



MUNICIPAL-LEVEL WEST NILE VIRUS RISK MODELING

Existing Official Efforts

- NJDEP conducts surface water reservoir system modeling using RiverWare and similar software for the Raritan River Basin
- NJDEP maintains extensive ambient and drought monitoring networks

Scale of Implementation



Co-Benefits



EDUCATIONAL



RARITAN RIVER AND BAY COMMUNITIES



Action – Prioritize Equitable Investments in Public Programs to Reach/Assist Under-Resourced Populations

Tools

- Initiate public programs to distribute critical risk-mitigating resources (alongside installation assistance), especially to environmental justice and other economically vulnerable communities:



AIR CONDITIONERS, CLEAN ENERGY TECHNOLOGIES AND TRANSPORTATION SUBSIDIES



SOIL MOISTURE/RAIN SENSORS AND SMART CONTROLLERS FOR IRRIGATION EFFICIENCY



WATER QUALITY TEST KITS, EMERGENCY AT-HOME WATER FILTRATION SYSTEMS



SPRAYS, WINDOW AND DOOR SCREEN PROTECTIONS, TICKSCAPE RESOURCES

- Set up public health monitoring and screening programs that are accessible to everyone (including undocumented people) to help identify exposure to adverse health conditions in environmental justice communities:



MOBILE MAMMOGRAPHY WITH ON-SITE MEDICAL SERVICES, ASSISTANCE IN OBTAINING SUBSIDIZED HEALTH INSURANCE



LOCALIZED MONITORING OF WATER QUALITY CONDITIONS, ESPECIALLY IN HIGH HAZARDOUS WASTE PROXIMITY SITES

Existing Official Efforts

NJ Department of Community Affairs help administer the Low-Income Home Energy Assistance Program (LIHEAP), a federally funded program to help low-income families and individuals meet home heating and cooling costs.

Scale of Implementation



NEIGHBORHOOD



MUNICIPALITY



STATE

Co-Benefits



ECONOMIC



RARITAN RIVER AND BAY COMMUNITIES



Action – Develop Hazard-Specific Emergency Response Plans Using National Best Practices

Tools

- Develop municipal-scale response and/or contingency plans with clear actions to address specific extreme events, including:



HEATWAVES



WATER SUPPLY EMERGENCIES AND SEVERE FOOD SHORTAGES



AQUIFER CONTAMINATION AND/OR HAZARDOUS PLUMES



SEVERE WILDFIRE SMOKE



WEST NILE VIRUS SEASONAL OUTBREAKS

- Review existing plans and procedures to ensure they align with national best practices:



STREAMLINE EXISTING DROUGHT AND WATER SUPPLY EMERGENCY MANAGEMENT PROCEDURES



ENSURE REDUNDANCY IN EARLY WARNING AND PUBLIC COMMUNICATION SYSTEMS



INCORPORATE INTEGRATED MOSQUITO MANAGEMENT FOR POST-FLOOD RESPONSE

Existing Official Efforts

- New Jersey statewide regulations that require all water allocation permit holders to submit updated Water Conservation and Drought Management Plans (WCDMPs)
- NJDEP encourages all households to make an emergency plan in the event of any severe weather disaster and offers guidance to citizens to realize them
- NJDEP provides a worksheet and technical guidance for Wastewater Systems Emergency Response Plans

Scale of Implementation



MUNICIPALITY



REGION



STATE

Co-Benefits



EDUCATIONAL



RARITAN RIVER AND BAY COMMUNITIES



Action – Invest in Accessible Shelters, Cooling Stations, and Resilience Hubs

Tools

- Identify high-priority areas to expand the scope and concentration of universally accessible community centers for provision of relief and resources during extreme events:



COOLING, ELECTRICITY/WI-FI DURING “BROWN-OUTS,” POTABLE WATER DISTRIBUTION



WELL AIR-FILTRATED SPACES WITH ELECTRICITY AND WIFI FOR POOR AIR QUALITY DAYS



POTABLE WATER DISTRIBUTION



SHELTER, POTABLE WATER AND FOOD DURING SEVERE WEATHER

- Work with local civic groups and mutual aid networks to encourage and support establishment of multi-purpose “resilience hubs” that can serve as both shelters/cooling stations while also providing additional community resources, capacity building, and space for civic organizing and advocacy to advance action



SUPPORT EDUCATION AND ORGANIZING AROUND HEALTH RISKS AND ACTIONS/POLICIES TO MITIGATE



PREPAREDNESS CAPACITY BUILDING, TRAINED COMMUNITY DISASTER RESPONSE NETWORK



SUPPORT EDUCATION AROUND INCREASING RISKS, ORGANIZE CLEANUPS OF STAGNANT WATER SOURCES

Existing Official Efforts

- Most municipalities have started to implement cooling centers on extreme heat days in dense urban areas

Scale of Implementation



NEIGHBORHOOD



MUNICIPALITY

Co-Benefits



ECONOMIC



RARITAN RIVER AND BAY COMMUNITIES

BIBLIOGRAPHY (TO BE FULLY REFERENCED)

- <https://www.epa.gov/heatislands/adapting-heat#:~:text=Programs%20that%20install%20cool%20or,system%2C%20particularly%20during%20heat%20waves.>
- <https://www.azdhs.gov/documents/preparedness/emergency-preparedness/response-plans/extreme-heat-incident-annex.pdf>
- <https://www.dhhs.nh.gov/dphs/climate/documents/nh-excessive-heat-plan.pdf>
- https://thrivingearthexchange.org/wp-content/uploads/2016/03/Brookline_Heatwaves_SDS-2.pdf
- https://healthyplacesindex.org/wp-content/uploads/2018/02/2013_cph_preparing_california_for_extreme_eat.pdf
- <https://www.whitehouse.gov/briefing-room/statements-releases/2021/09/20/fact-sheet-biden-administration-mobilizes-to-protect-workers-and-communities-from-extreme-heat/>
- https://www.c40knowledgehub.org/s/article/How-to-adapt-your-city-to-extreme-heat?language=en_US
- <https://www.c2es.org/wp-content/uploads/2017/11/resilience-strategies-for-extreme-heat.pdf>
- <https://www.groundwater.org/action/community/community.html>
- [Tick Management Handbook \(tickdiseases.org\)](https://www.tickdiseases.org/Tick-Management-Handbook)
- <https://naturalpestrepellents.com/blog/Tickscaping-your-yard/>
- <https://www.nj.gov/dep/ej/>
- <https://www.nj.gov/dep/wiip/>
- <https://www.stormh2o.com/green-infrastructure/press-release/21225763/new-jersey-invests-122-million-in-water-infrastructure-through-green-bonds>
- https://www.nj.gov/dep/dwq/mface_njeifp.htm
- <https://www.nj.gov/dep/njisc/docs/Final%20NJ%20Strategic%20Management%20Plan%20for%20Invasive%20Species%2011.09.pdf>
- [Mosquito Control in a Community | Mosquitoes | CDC](https://www.cdc.gov/mosquito-control/)
- <https://www.state.nj.us/dep/watersupply/conserv.htm>
- https://www.contracostamosquito.com/PDF/BMPforMosquitoControl_08_10.pdf
- <https://www.nj211.org/utility-assistance-programs>
- https://www.nj.gov/dep/dwq/pdf/guidance_erp.pdf
- [The Groundwater Foundation : Take Action : In Your Community : Wellhead Protection](https://www.groundwater.org/action/community/community.html)
- https://www.contracostamosquito.com/PDF/BMPforMosquitoControl_08_10.pdf
- [guidance_erp.pdf \(nj.gov\)](https://www.nj.gov/dep/dwq/pdf/guidance_erp.pdf)
- <https://www.osha.gov/news/newsreleases/national/09202021>



BIBLIOGRAPHY

- <https://www1.nyc.gov/office-of-the-mayor/news/350-20/mayor-de-blasio-covid-19-heat-wave-plan-protect-vulnerable-new-yorkers>
- https://www.cdc.gov/climateandhealth/docs/HeatResponsePlans_508.pdf
- <https://link.springer.com/article/10.1007/s11356-020-08647-x#Sec12>
- <https://www.aeroqual.com/blog/air-quality-mitigation-strategies-for-communities>
- <https://www.edf.org/airqualitymaps/oakland/policies-reduce-pollution-and-protect-health>
- https://netl.doe.gov/sites/default/files/environmental-policy/eis-kemper-draft/12_Chapter-5.pdf
- <https://www.state.nj.us/dep/vw/BMPfinal.pdf>
- https://www.naco.org/sites/default/files/documents/AQ_Factsheet%20-%20Air%20Quality%20Improvement%20Guide%20for%20Local%20Governments.pdf
- <https://www.climatehubs.usda.gov/dealing-drought>
- <https://crsreports.congress.gov/product/pdf/R/R46911>
- <https://drought.ca.gov/#:~:text=Governor%20Newsom%20signed%20a%20package, and%20quality%2C%20and%20support%20wildlife.>
- https://www.drought.gov/sites/default/files/2021-11/2021%E2%80%932024_MW_StrategicPlan.pdf
- https://www.waterboards.ca.gov/water_issues/programs/grants_loans/drops/
- <https://www.nj.gov/dep/watersupply/pdf/wsp.pdf>
- [https://www.drought.gov/about/drought-early-warning#:~:text=Drought%20early%20warning%20systems%20\(DEWS, with%20the%20impacts%20of%20drought.](https://www.drought.gov/about/drought-early-warning#:~:text=Drought%20early%20warning%20systems%20(DEWS, with%20the%20impacts%20of%20drought.)
- <https://www.groundwater.org/action/community/community.html>
- <https://www.usgs.gov/programs/groundwater-and-streamflow-information-program/groundwater-monitoring>
- https://www.nj.gov/dep/srp/guidance/rs/bb_migration_gw.pdf
- <https://www.state.nj.us/dep/wms/bears/gwqs.htm>
- https://www.canr.msu.edu/news/local_government_strategies_to_protect_groundwater
- <https://www.npr.org/2021/12/16/1064590315/after-a-year-of-deadly-weather-cities-look-to-private-forecasters-to-save-lives>
- https://nj.gov/njoem/mitigation/pdf/2019/mit2019_section6_Mitigation_Strategy.pdf



