Overall Theme	Adaptation Strategies	Comments/Explanations	Potential Partnerships	Tools
Energy				
1In	Purchase or install Class I clean energy sources to power municipal buildings (including Board of Education).	Cross-reference with Sustainable CT Action 6.4.	CT PURA, local/regional school districts, Public Works/Building Manager	2014 Integrated Resources Plan For Connecticut, CT DEEP http://www.ct.gov/deep/lib/deep/energy/irp/2014_irp_final.pdf
2In		Cross-reference with Sustainable CT Action 6.6 and NHCOG Regional Transportation Plan	CEOs; CT DEEP, NHCOG	Example: Ridgefield CT Municipal Fleet
3In	schools, town halls, etc.	Incorporate with Natural Hazard Mitigation Plan.	EMDs, CEOs	
4In	Consider creating a Microgrid program for critical facilities in your community. Develop municipal-wide renewable energy incentive program	Cross reference with Sustainable CT Action 1.6.	CEOs, local conservation organization, Conservation Commission, CT DEEP, PURA	CT Green Bank (Solarize Connecticut, C-Pace municipalities, Lead by Example); CT Microgrid Program (https://www.ct.gov/deep/cwp/view.asp?a=4405&Q=508780); NY Climate Smart Webinar "Building Clean and Resilient Local Power: NY Prize Update & Microgrid Case Studies" http://www.dec.ny.gov/docs/administration_pdf/cscnyprize.pdf
5In	Direct mid and large scale commercial solar installations away from farm fields and core forests and toward brownfields and industrial sites.	Task from POCD Goal 2.	land use commissions, Utilities, NorthwestConneCT, CT PURA, CT DOT, Public Works	
Land Use				
6In	Consider climate change vulnerabilities and adaptation for siting and design of new and redesigned/ reconstructed facilities. Avoid flood prone or erosion prone areas for infrastructure, especially if underground or underwater transmission and pipe lines are a preferred alternative. Where practicable, relocate infrastructure outside of coastal and inland flooding zones. Where practicable, relocate cultural resources outside of coastal and inland flood zones; where relocation is infeasible, protect areas around cultural resources from coastal and inland flooding, as allowed by law, using methods that minimize adverse environmental impacts.		land use commissions, utilities, NorthwestConneCT, CT PURA, CT DOT, Public Works, CT DAS	EPA WEPPCAT Water Erosion Prediction Project (WEPP) Model https://cfpub.epa.gov/ncea/global/recordisplay.cfm?deid=153583
7In	climate conditions including electricity conduits, electric grid and communication infrastructure (towers, lines, etc.), and communication lines to water, salt intrusion, and more frequent and stronger storm events. Communicate with power/communications/sewer/water utilities about enhancing resiliency of systems prior to significant construction in downtown areas. Require the location of utilities underground in new developments	considered in Kent Natural Hazard Mitigation Plan. Dense forests can be most dangerous.		Tree management - Uconn Stormwise Program, Tom Wordsley
8In	For communications, emergency generators and fuel supplies are often in basements or ground level, and vulnerable to flooding – building codes may have to be revised to allow for positioning this infrastructure at higher levels.		EMDs, building department	

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Facilities and Buildi				
9In	Work with FEMA on building relocation policy after destructive events		CEOs, EMDs, REPT ESF Long- term Recovery, land use commissions	
10In	Monitor changes to forest fire frequency and intensity and consider wildfire retrofitting	Cross reference with Natural Resources	CT DEEP, local land trusts, municipal departments	California Governor's Office of Planning and Research in a 2015 "Fire Hazard Planning" report from the "General Plan Technical Advice Series."
11In		POCD Goal 2 and Sustainable CT Action 4.4. Also a Cultural Resources & Natural Resources action.	Public Works, Tree Warden, loca conservation groups, land use commissions	SECCOG Critical Facilities Vulnerability Assessment(https://resilientrural.com/wp- content/uploads/2018/11/Infrastructure-SECCOG- Critical-Facilities.pdf); CT NRCS Conservation Technical Assistance; Nature Conservancy Climate Wizard http://www.climatewizard.org/; Conservation Commissions & Climate Change https://resilientrural.com/wp- content/uploads/2018/11/Conservation- Commissions-and-Climate-Change-NH.pdf; US National Phenology Network https://www.usanpn.org/; Resilient Rural Webmap
12In	Manage municipal properties to reduce heat island affect.	Cross-reference with Public Health.	Public Works	https://resilientrural.com/wp- content/uploads/2018/11/NASA-NHCOG-heat- islands-by-town-Braneon-McConnell.zip
13In	Improve building codes to account for more frequent and stronger storms		local land use commissions and departments	
14In	Change property tax structure to provide incentives for setbacks, rolling easements, and covenants to preclude building and reconstruction in vulnerable areas		CT legislature, local Board of Finance	
15In	Provide support to vulnerable populations (i.e., environmental justice communities, the elderly and disabled) to ensure residence resilience to climate change, including incentives for relocation if re-engineering is not feasible.		Social service agents, EMDs, health providers	
16In	Incentivize residents to weatherize their homes		TAHD, health districts, Conservation Commission, building department	Connecticut's Weatherization Assistance Program from CT DEEP; Weatherization Assistance Program for low-income and elderly from US DOE
17In		Cross link to Public Health - Emergency Response.	EMDs, Public Works, CEOs, building department	CT Building Code

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Solid Waste Manage	ment			
18In	New and reconstructed infrastructure, including landfills and transfer stations, should be located in areas less vulnerable to climate change. Evaluate ability and need to armor or relocate transfer station and related solid waste infrastructure located within sea level rise or inland flooding areas. Harden solid waste storage areas against extreme precipitation, wind events, flooding, etc.		Transfer stations, CT DEEP, Public Works, local businesses	
19In	Devise alternative routes or collection locations to service those areas that will be isolated by flooding		Transfer stations, trash collection businesses, Public Works	
20In	Update aging solid waste infrastructure considering green practices that may be more resilient to climate change impacts, especially precipitation and stormwater effects		Transfer stations, CT DEEP, Public Works, resource recovery authorities	
Transportation				
21In	Investigate the impacts of developments on the whole watershed and downstream effects on transportation infrastructure to evaluate effects and determine design criteria, e.g., culvert and drainage system sizing.		Public Works, CT DOT	
22In	Consider hardening airports and/or landing areas against extreme storms.	Coordinate with CEDS Goal 4	FAA, CT DOT, local airports	
23In	Identify portions of railroad at-risk to flooding and erosion. Identify frequently flooded and/or washed out roads. Consider abandonment of roads and bridges when re-engineering would be too costly to adapt to climate change, or when better environmental and resiliency options or alternative routes exist. Adjust road maintenance schedules for changing seasons. Identify at risk areas along roadways that may be at risk of erosion	Coordinate with CEDS Goal 4. Review Naugatuck and Housatonic Railroads. If scenic road, take special care to consider how	Public Works, CT DOT, railroad owners, land trusts	Fact sheet on municipality's ability to abandon a road continually threatened by flooding is forthcoming from AdaptCT. https://www.climatehubs.oce.usda.gov/hubs/north east/topic/future-winter-roads EPA WEPPCAT Water Erosion Prediction Project (WEPP) Model https://cfpub.epa.gov/ncea/global/recordisplay.cfm?deid=153583
24In	Coordinate emergency evacuation and supply transportation routes with emergency preparedness systems to ensure capacity and resilience of escape routes compromised by natural disasters related to climate change		REPT, EMDs, CEOs, CT DOT, Public Works	
25In	Improve sidewalk connectivity and develop Model Sidewalk Ordinance.	Cross referenced with NHCOG Regional Transportation Plan.	Public Works, CEOs	https://www.walkscore.com/about.shtml
26In		e.g. Housatonic Bike/Walk Trail, Naugatuck	local land trusts, Parks & Rec, NHCOG, CT DOT, Public Works	

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27In	Request design standards for infrastructure projects that incorporate climate projects like maximum temperatures		ACOE, FEMA, NOAA, USGS, CT DOT, Public Works	
28In	Consider the level of watershed development, and potential LID and green practices that may affect engineering designs and level of development from transportation infrastructure like planned road improvements. Increase communication, collaboration and planning among watershed authorities and the public to decrease stormwater by promoting LID and green BMPs. Promote and require preservation of natural features that treat and infiltrate runoff such as buffers, wetlands and related landscape conditions to reduce runoff by infiltration or detention in biologically active conditions and reduce primary pollutants including organic matter/nutrients. Remove or modify impediments to natural treatment and storage (e.g., impervious cover, culverts, dams) to accommodate LID techniques.	7.2 Provide Effective Community Communications. Cross reference with NHCOG POCD Goal 2 and WUCC	Public Works, municipal departments, land use commissions, CT DOT, NWCD, and Lake Waramaug Task Force	Town of Morris LID Manual; Stormwater Calculator with Climate Assessment Tool, EPA https://www.epa.gov/water-research/national-stormwater-calculator, EPA Green Infrastructure website https://www.epa.gov/green-infrastructure; Managing Wet Weather with Green Infrastructure Municipal Handbook https://www.epa.gov/sites/production/files/2015-10/documents/gi_munichandbook_green_streets.pdf, Enhancing Sustainable Communities With Green Infrastructure: A Guide to Help Communities Better Manage Stormwater While Achieving Other Environmental, Public Health, Social, and Economic Benefits (2014), EPA https://www.epa.gov/smartgrowth/enhancing-sustainable-communities-green-infrastructure; Green Infrastructure Tools, NOAA http://oceanservice.noaa.gov/news/sep15/green-infrastructure.html
29In	Develop joint transportation strategies with adjacent communities, regions and states to accommodate changing conditions and transportation system use. Balance needs of natural resources and human safety for determining which transportation infrastructure to reconstruct or relocate. Communicate regional transit assets and options. Encourage transit-oriented development with residential/commercial areas along bus routes and/or train/bus stations.	Plan and POCD Goals 1 & 4, Sustainable CT Action 5 and CEDS Goal 4. Related project: NWTD regional transit facility.		Climate Change Adaptation Guide for Transportation Systems Management, Operations, and Maintenance https://ops.fhwa.dot.gov/publications/fhwahop150 26/
30In	During bids for infrastructure projects, request materials designed for higher incidences of heat stress and intense flooding to prevent or reduce buckling or softening. Consider use of "cool pavement" to reduce heat island affect and protect surface water.	Coordinate with CEDS Goal 4	CEOs, Public Works, CT DOT	Hartford's Green Infrastructure Handbook - https://circa.uconn.edu/wpcontent/uploads/sites/ 1618/2018/09/Green-Infrastructure-Handbook.pdf ; https://www.pavementinteractive.org/reference- desk/pavement-management/impacts/cool- pavementgeneral/

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31In	Create an Inventory of all road-stream crossing structures (i.e., bridges and culverts) in town and prioritize for replacement, based on conservation benefits, minimizing flood risk, and maintenance need. Re-establish connectivity and more natural flows along our rivers and streams by removing or modifying existing structural impediments, such as dams, and culverts. Work with CT DOT on context dependent adaptation strategies and other tools to expand the adaptive capacity of an at-risk structure. Develop and implement a municipal sediment control plan to prevent clogged drainage systems such as routine street sweeping, curb and gutter cleaning, paving dirt roads, and planting vegetation on bare ground (from Litchfield Hills NHMP)		local/regional conservation organizations, Public Works, CT DOT	HVA Culvert Assessment Program (https://resilientrural.com/wp- content/uploads/2018/11/Natural-Resources-HVA- Culvert.pdf); North Atlantic Aquatic Connectivity Collaborative Database search page (https://naacc.org/naacc_search_crossing.cfm); US DOT Vulnerability Assessment Scoring Tool https://toolkit.climate.gov/tool/vulnerability- assessment-scoring-tool-vast
32In	Communicate with USGS to maintain stream gages to monitor peak flow, water volume, temperature, etc.	Cross-reference with Natural Resources	local/regional conservation organizations, Public Works, CT DOT	
33In	Many small communities limited road access. Communities' access should be reviewed and, where needed, upgraded to ensure resilient ingress and egress. Assess viable options to improve access to these areas and integrate into building, land use, and public works planning documents.		Public Works, CT DOT	
WATER				
	Dams and Levees			
34In	Consider dams in or up-stream from your municipality. Discuss with the management and with CT DEEP about the dams safety and plans for long-term resiliency. Confirm its ability to handle increasingly intense storms. Don't forget smaller (especially earthen) dams throughout your community. Check municipal records for the required Emergency Action Plans for Class B and C dams as they should be submitted to the town every two years. Include dam failure inundation areas in the CT Alert emergency contact database. For privately owned dams, encourage each dam owner regardless of Class to have a maintenance plan and an Emergency Operations Plan/Emergency Action Plan. Also encourage them to implement recommendations resulting from state inspections (from Litchfield Hills NHMP).	Cross reference with communications suggestions in Cultural Resources and Public Health - Emergency Response	CT DEEP, hydropower facilities, private property owners, EMDs	local or multi-jurisdictional Natural Hazard Mitigation Plans
	Regulated Stormwater Point Sources and Nonpoint Source Runoff			
35In	Determine new levels of terrestrial stormwater and nonpoint source pollution (e.g., through comprehensive watershed-based planning) related to climate change and determine standards required to address quantity and quality issues.		Public Works, CT DOT, local conservation organizations	Stormwater Calculator with Climate Assessment Tool, EPA https://www.epa.gov/water-research/national- stormwater-calculator Storm Water Management Model with Climate Adjustment Tool https://www.epa.gov/water-research/storm-water- management-model-swmm
36In		Mapping of impervious surfaces may assist in MS4 requirements.	Public Works, CT DOT, local conservation organizations	Antioch University New England Webinar "Where to Put the Water: Assessing the Vulnerability of Urban Stormwater Systems to a Changing Climate" (http://www.communityresilience-center.org/webinars/where-to-put-the-water-assessing-the-vulnerability-of-urban-stormwater-systems-to-a-changing-climate/)

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37In	Include climate change into local emergency operation plans, state Hazard Mitigation Plans, and similar response programs	Cross reference with all other topics	EMDs, REPT, COGs	Cross-reference worksheet (https://resilientrural.com/wp- content/uploads/2018/11/Worksheet-2-Plan- Review-Checklist.docx)
38In	Develop a long-term beaver management plan that includes: control measures to mitigate localized flooding created by beavers; consideration of the use of beaver deterrent devices such as beaver stops or beaver bafflers and consideration replacing culverts frequently impacted by beavers with free span bridges.	from Litchfield Hills NHMP	EMDs. Public Works, CT DOT, local conservation organizations	
	Flood Management			
39In	Implement Ice Jam Observer Training. Conduct geo-morphic assessment to identify potential causative	Especially town of Kent, long bridge at Pleasant Valley in Barkhamsted	EMDs, local conservation organizations, REPT, River conservation organizations	Shane Csiki (NH DES) Training: https://www.des.nh.gov/organization/commissione r/gsu/fegh/documents/201711-ice-jam- presentation.pdf
40In		(E.g. Relocate the New Hartford Public Works Garage out of the Farmington River Floodplain and Winchester Public Works Garage- Litchfield Hills NHMP)	EMDs, CEOs	local or multi-jurisdictional Natural Hazard Mitigation Plans; SECCOG Critical Facilities Vulnerability Assessment(https://resilientrural.com/wp-content/uploads/2018/11/Infrastructure-SECCOG-Critical-Facilities.pdf); Fall 2019 - "New Hampshire Flood Response Toolkit"; EPA Flood Resilience Checklist https://www.epa.gov/sites/production/files/2014-07/documents/flood-resilience-checklist.pdf; Maine Flood Resilience Checklist (2017) https://digitalmaine.com/cgi/viewcontent.cgi?referer=&httpsredir=1&article=1520&context=mgs_publication s
41In	Coordinate with emergency management to identify sites that store hazardous materials and develop risk management plans for power failures, flooding, heat fluctuations, etc. Create inventory and map of Brownfields sites and identify sites at risk of flooding.	Cross reference with Sustainable CT Action 1.1	Fire department, EPA, local health department, local businesses	
42In	Communicate flood risk to residents and encourage them to purchase flood insurance.		EMDs, health departments	My RainReady (http://myrainready.cnt.org/)offers step-by-step guidance to help you evaluate your flooding risks and find the best means of prevention.; Federal Insurance: Moonshot Starter Kit https://www.fema.gov/media-library/assets/documents/166428

Wasterwater			I	1
Wastewater 43In	Evaluate and improve emergency power provisions to assure uninterrupted pump station service during heavy storms with associated power outages. Evaluate and improve, where necessary, the capacity of pump stations that are subject to infiltration and inflow.		Utilities, Public Works	
44In	Implement a training program for wastewater treatment facility operators to educate them on how to prepare for climate change, e.g., extreme storms, high temperatures.		Utilities, Public Works	New England Interstate Water Pollution Control Commission website http://neiwpcc.org/our- programs/climate-change/preparing-extreme- weather-wastewater-utilities/
45In	Educate municipal inland wetland commissions and water pollution control authorities about emergency permit requirements for temporary equipment needed to protect wastewater treatment facilities located near regulated inland or coastal wetlands. Investigate protection strategies (e.g., berms, dikes) to protect treatment		CT DEEP, CT DPH, Utilities, Public Works, CACIWC	
46In	wastewater reuse for non-potable uses, such as golf course irrigation, to decrease potable water treatment needs	Cross reference with WUCC "Prioritization and Implementation for Non-Capital Improvement Recommendations"	local land use commissions, health departments	"Requiring new homes to reuse water (Residential Gray Water Stub-out Building Code), 2013, Chula Vista, CA" https://greencitiesca.squarespace.com/water-1/chula-vista-residential-graywater; United States Environmental Protection Agency. (2012). Water Recycling and Reuse: The Environmental Benefits. Retrieved from: http://www.epa.gov/region9/water/recycling/
47In	Assess existing on-site (subsurface disposal) systems for effects related to climate change and, where necessary, consider alternative on-site technologies or abandonment in favor of public/community wastewater treatment systems.		Utilities, Public Works	(CENTITY WHICH THE VEHILE)
48In	Consider the potential higher groundwater levels in design standards for separation distances and other relevant standards.		Utilities, Public Works	
Water Supply				
49In	Encourage water conservation best management practices for snow making for ski destinations in Connecticut. Provide an incentive to encourage water conservation of public water supply and/or develop local drought ordinances. Develop a drought communications plan to inform residents about voluntary and mandatory drought restrictions and Develop an early warning system to notify the general public about water shortages.	Cross reference with Drought Communications Plan in Natural Resources section and Sustainable CT Action 2.6 and WUCC "Prioritization and Implementation for Non-Capital Improvement Recommendations" Cross reference with Litchfield Hills NHMP. Consider as Natural Resources and Public Health Action as well.	CEOs, CT Water Planning Council, local land use commissions, TAHD, local health districts	https://library.municode.com/ct/greenwich/code s/code of ordinances?nodeId=CH10.SEWA_ART5 WASH_S10-27DRMAPL&showChanges=true_, CT Drought Management Plan ; Northeast Drought Early Warning Center https://www.drought.gov/drought/dews/northeast st ; https://www.drought.gov/drought/resources/reports
50In	Participate in the Water Utilities Coordinating Committees to assist in developing regional and statewide solutions to water shortages and emergencies including strengthening coordination of regional water supplies to encourage water conservation.		CEOs, Public Works, COGs, utilities	
51In	Service Areas, water management through zoning regulations, etc.)	Cross reference with WUCC "Prioritization and Implementation for Non-Capital Improvement Recommendations"	local land use commissions and departments	
52In	Review regulations for common sense use of rain barrels. Ensure regulations encourage collection strategies that reduce access by mosquitoes.	Cross reference with action under agriculture to increase storage of precipitation.	TAHD, health districts, Conservation Commission, building department	Several communities, including King County, WA, have developed programs to incentivize or give away rain barrels for the sake of stormwater management and drought preparedness."

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urface Water Sour	rces			
53In	Purchase land around water supplies to increase the surrounding conservation buffer area	Cross-reference with Natural Resources - land acquisition	Water utilities, WUCCs, conservation organizations, land trusts	
54In	Water supply plans pursuant to CGS section 25-32d should include climate change vulnerability analyses and risk assessments for surface supply, including future drinking water availability, competing needs and options for adaptation and mitigation. Incorporate climate resiliency or other green planning practices into waste supply treatment design manuals for water reuse to lessen demand on potable water.		Water utilities, WUCCs	
roundwater/Potal	ble Water Planning			
55In	Increase public water supply hook-ups for private wells subject to salt intrusion. Use "smart" applications for road treatments during winter storms.		TAHD, CT DPH, CT DOH, Public Works, CT DOT	Dr. Gary Robbins at Uconn
56In	Increase effluent quality of wastewater treatment to allow for water reuse for non- potable uses.		Water Utility Coordinating Committees (WUCC); CT DPH; health departments, CT DEEP	
57In	Identify small community water systems struggling with supply, quality, and management issues. Water systems, especially small systems, should increase technical capacity to anticipate and mitigate impacts from droughts. They should also coordinate water use restrictions with town/state ordinances. Update and repair antiquated and leaking distribution infrastructure.		Water Utility Coordinating Committees (WUCC); CT DPH; health departments	EPA CREAT https://www.epa.gov/crwu/creat-risk assessment-application-water-utilities; Ordinance from Connecticut Drought Plan; USDA Rural Development
58In	Community water systems, besides having a backup emergency generator, should plan for extended power outages with redundant fuel systems or larger fuel capacities. Water systems should coordinate with the utilities and EMDs to ensure the systems are on the priority electrical restoration list even with standby power.		EMDs, community water systems, Utilities, Public Works	local and multi-jurisdictional natural hazard mitigation plans; Creating Resilient Water Utilities (CRWU), EPA https://www.epa.gov/crwu; See table 5-1, Theme 1-A for current recommendations on generator usage in Drinking Water Vulnerability Assessment and Resilience Plan
59In	Decrease pharmaceutical and other emerging toxic chemical concentration in water supply that might be further spread by climate change effects by strengthening federal rules, and educating homeowners about safer disposal practices		health services, local pharmacies, NHCOG Prescription Assistance network	
mmunications				
60In	Map locations of communications infrastructure vulnerable to floods, storm surges, extreme thermal or precipitation events, wildfire, etc.		Utilities, Public Works	
61In	Identify redundancies and re-routing potential in communication infrastructure for emergency switching should primary systems fail. Adequately insure communications infrastructure to ensure that reconstruction can occur in the event of a climate related disaster	Cross link to Public Health - Emergency response	Utilities, Public Works, REPT, Amateur Radio Network	
62In	Work with FirstNet (public safety broadband network) to improve communications coverage	Cross link to Public Health - Emergency response	EMDs, REPT, COGs	FirstNet.gov
63In	Develop sustainability checklists for planning, zoning, building, health department permit applications to incorporate sustainable design elements. Compile a checklist that cross-references the bylaws, regulations, and codes related to flood damage prevention that may be applicable to a proposed project and make this list available to potential applicants.	Cross Reference with Sustainable CT Action 4.2 and WUCC Integrated Report recommendations.	local conservation organizations, building departments	local/multi-jurisdictional Natural Hazard Mitigation Plans