GRANITE STATE FUTURE
Regional Plan Framework

Appendices:

Collected 2012 work products from the six Technical Advisory Subcommittees (TASCs).

Committee Membership

Traditional Settlement Patterns and Development Design TASC:

- Research Matrix
- Existing Resources Worksheet

Housing and Transportation Choices TASC:

- Research Matrix

Natural Resources Functions and Quality TASC:

- Research Matrix
- Natural Resources Reference Guide

Community and Economic Vitality TASC:

- Research Matrix

Climate Change and Energy Efficiency TASC:

- Research Matrix
- Executive Summary on Climate Change in New Hampshire
- Indicators of Climate change in the Northeast (Wake, 2005) Summary
- CRE-Coast Project in the Hampton-Seabrook Estuary Summary

Equity and Engagement TASC:

- Research Matrix

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Traditional Settlement Patterns & Development Design TASC:

Research Matrix

Related Plan Components	Existing Resources	Existing Policies, Principles, Goals, and Questions to be Addressed	Metrics			
			Baseline Data: Existing Conditions and Trends	**Short Term Planning Process (1-3 Years)**	**Mid Term Benchmarks (3-5 Years)**	**Long Term Implementation Effect (5-20 Years)**
Vision	Local Master Plans Regional Plans DES Strategic Plan Livable Walkable Toolkit Innovative Land Use Handbook	Prepares a community vision of how the community should plan for future growth and development. Promote regional thinking for the communities as they plan for future growth and development, and the impact across town borders. Compact development supports efficient use of land and reduces loss of open space by allowing for increased density in areas of existing development such as town centers and downtowns. Benefits of compact development include reduced infrastructure costs, increased support for neighborhood retail and transit services, and reduced auto-dependence by locating destinations in closer proximity to one another.	• Changing demographics (e.g., aging pop) drive different needs for community design • Changing climate/env conditions (e.g., more severe storms, flooding, drought) present increased risk to facilities, human health, safety (source: NH Climate Action Plan & Adaptation planning work) • Development patterns which make walking and other physical activities inconvenient and/or dangerous, and the lack of access to fresh produce are just two of many factors contributing to the State's high level of obesity, including school aged children • Innovative Land Use Techniques combat sprawl trends by redeveloping vacant/underused space into green/open space, limiting on-screen parking, planning large neighborhoods in close proximity to downtown areas, and defining square footage standards in commercial development areas	• Visual representation of existing zoning and land use regulations compared to that of potential innovative land uses.	• Maintain public interest by highlighting new projects completed under innovative land use zoning.	
Land Use	State and City Regulations Livable Walkable Toolkit Innovative Land Use Handbook Local Master Plans DES Strategic Plan Analysis of patterns of development using Community Center Area and Key Destinations GIS data sets (GRANIT); in combination with US Census Block data for housing and population	Promote efficient use of land through compact development strategies (10, 23, 49) Preference for infill & redevelopment (especially within Community Center Areas) over new, "greenfield" development (10, 23, 49) Maintain viable working landscape (10, 49); Protect drinking water supply intake areas (23) Protect/retain future potential supplies (both surface water and groundwater) (23, 24) Encourage nodal and mixed use land development; Guide communities for potential growth areas, conservation areas (4)	• Identify current regulations that are barriers to sustainable development • % pop (& housing) within 1/2 mile of Community Center Area, 2000 vs 2010 (calc using CCA GIS data from GRANIT and Census data) • % Key Destinations within Community Center Areas (calc using GIS data sets from GRANIT) • Identify patterns of development trends of land use, and barriers to development • Increasing Acres of Dev Land per person over time (OEP Challenges and Changes, 2000; NHSPF Changing Landscapes) • % pop within 1/2 mile of KEY destinations (e.g., school, grocery store, employment center) (calculate using detail of Key Destinations GIS data layer and 2010 Census block data)	• Public $ invested in community center areas (or within 1/2 mile) - requires tracking of state and municipal projects via GIS (and comparing with CCA GIS map) • Survey Community Center Areas to determine locations in need of pedestrian and bicycle related improvements (sidewalks, trees, bike racks, etc). Research potential locations for bike/walking paths throughout town, particularly those which would provide access to schools. Develop and implement plan and funding sources for improvements, beginning with those most feasible in the short term.	• % new residential units within 1/2 mile of community center area (requires geo-locating residential building permits, possible with new share-ware and address data) • Metric: Measure the percentage of the previously determined improvements which have been completed from baseline to year of date. • Metric: Of the number of developments in an area with innovative land use zoning overlays, how many opted for the overlay zoning compared to those choosing to develop under the baseline zoning regulations. • Metric: The number of building permits issued for each zoning classification.	• % pop (& housing) within 1/2 mile of Community Center Area (calc using CCA GIS data from GRANIT and Census data) • % Key Destinations within Community Center Areas (calc using GIS data sets from GRANIT) • Change in variability of size of Census Blocks (using Census Block size data; because block size adjusts to keep total pop per block roughly similar, spread out development results in similar sized blocks, and less variability in block size within an area) • Developed Acres per capita • Density within 1/2 mile of CCA compared to density of outer areas • % pop within 1/2 mile of KEY

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				Help shape the development of the public realm, particularly within Community Center Areas. • Experiment with various permutations & combinations of the Innovative Land Use techniques, testing the results under multiple scenarios. Adapt various methods of Innovative Land Use to the unique conditions found within individual towns. • Conduct a community visioning process based on the existing conditions and trends and the zoning that has generated them. Continue with developing a town-wide vision for the next 20 years. Update the local Master Plan to reflect the community's vision using Innovative Land Use and Livable Walkable Communities as guides • Partner with DES to determine areas of environmental significance at the local and regional levels. Incorporate such significant areas in the Local Master Plan using zoning techniques to offset any loss of developable land. Coordinate any bike/walking paths with ecologically important corridors	• Metric: Using spatial imaging (Landsat thematic mapping), map the changes in ground cover and building types over the years - this includes forest cover, field cover, subdivision types, etc. • Metric 1: Percent of vacant lots occupied or restored. Metric 2: Mixed use factor	destinations (e.g., school, grocery store, employment center) (calculate using detail of Key Destinations GIS data layer and most recent Census block data)
Implementation	Local Master Plans State and City Regulations Innovative Land Use Handbook Land use and floodplain regulations Local plans and Integrated Permitting Process	Support change to local zoning and regulations to encourage sustainable development principles (10,23,49) Build flexibility into zoning regulations to allow for innovative and evolving technologies (10, 23, 49, 24) Prevent development in hazard areas (4)	• Helps to identify potential growth areas, conservation areas for future land use planning • Identify current regulations that are barriers to sustainable development and incorporating innovative technologies • Current zoning / regulations • Current floodplain mapping and percent of floodplain developed • FEMA and NH HSEM has data that can be	• Collaborate with municipalities during the permitting process to explore ways to incorporate innovative technologies into project • $ in grants to communities to change land use ordinances and/or regulations to adopt certain sustainable	• Towns adopting new/revised ordinances/regulations per sustainable development practices (e.g., village zoning, FBC, conservation subdivision design, agricultural protection, etc.) - would be helpful if OEP survey of muni ordinances & regulations was rigorous & valid measurement tool	• State population with access to multi-modal transportation options (being tracked by DOT as part of their Balanced Scorecard measures) • Most recent floodplain mapping and percent of floodplain developed

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			Baseline Data: Existing Conditions and Trends	**Short Term Planning Process (1-3 Years)**	**Mid Term Benchmarks (3-5 Years)**	**Long Term Implementation Effect (5-20 Years)**
			used to show trends of hazard areas	development practices • Use available sources of funding to purchase high-risk undeveloped properties in flood zones, make use of conservation easements to prevent undeveloped floodplain land from being developed, implement zoning to produce development with low level of impervious surfaces.	• Percent of proposed land use ordinances / regulations adopted • Metric 1: Percent of undeveloped, high-risk floodplain land preserved as undeveloped to mitigate flooding • Metric 2: Percent of impervious surface area within floodplain	
Housing	Fair Housing Needs Assessments Innovative Land Use Handbook Federal, City and State Regulations Concord Housing Commission Charrette Study Downtown Plans	Promote mixed use/mixed income housing, particularly within and near existing community centers (49) Explore opportunities for cottage and in-fill housing to provide affordable housing opportunities within urban boundary (4,5) Provides data on housing needs, trends(1) Provides standards/guidelines for a variety of housing choices(3)	• SNHPC Region Estimated Workforce HHs (2008) : 49,913 (SNHPC 2010 Housing Needs Assessment, pg. 69) • Distribution of housing value within 1/2 mile of Community Center Area (indicates availability of variety of housing options within developed centers) • The average property value/per acre in New Hampshire's three densest regions (Seacoast, Greater Manchester, Greater Nashua) is $95,756. The average property value in the other 6 regions is $17013 per acre (69, pg. 19) • ID current regulations that are barriers to this type of development & communities where opportunities exist and have need for developing additional housing in urban boundary • Residential Building Permits increased by 2.2% from 2000 to 2005. Following the economic crisis, permits decreased by 72% between 2005 and 2009 (NH OEP)	• Local Analysis to determine each communities baseline • Create regional housing plans that are aligned with local and regional comprehensive land use and CIP plans • Collaborate with municipalities to develop zoning language that accommodates in a manner consistent with town/city vision; work to remove previously identified barriers to workforce housing. • Increase proportion of low to very-low income households within 15-30 minutes of major community/employment centers in downtown areas	• TBD in 2015 SNHPC Housing Needs Assessment • Metric: Percent of housing located near (distance depends on if rural, suburban or urban) healthy food options: farmer's markets, produce markets, grocery stores, etc. (change zoning in certain areas to allow for markets) • Metric: Percentage of households in income-affordable housing (housing cost is <30% of household income) True Housing Affordability - Percentage of households paying <45% of household income on housing and transportation	• Estimated increase needed from 2008 - 2015: 4,635 (SNHPC 2010 Housing Needs Assessment, pg. 69) • Change in distribution of housing value within 1/2 mile of Community Center Areas
Transportation	Regional and Local Corridor Transportation Plans Downtown Plans Pedestrian/Bike Plans Livable Walkable Toolkit NH Climate Action Plan	Integrated transportation, land use and environmental planning efforts (10, 49) Ensure culverts and crossings are adequately sized for potential higher flows with larger storm events (23, 49) Improve winter management to reduce salt use (34) Promote "complete streets" - appropriate scale, public amenities, interconnected parking & street systems; provide/support transit, bicycle, pedestrian travel to support traditional, compact development	• Mode share (the goal is to decrease the dependence on single-occupancy vehicle (SOV)): SOV: 85%, Carpool: 9%, Transit:1%, Bike: 0.5%, Walk: 5% (HUD Flagship Indicators) • Headway and service times of mass transit: currently is about 55 minutes, or just under 1 pick-up/stop/hour (DOT) • Miles of bicycle infrastructure within compact development areas statewide • Miles of sidewalk infrastructure within compact development areas statewide • Walkscore.com - Assists visitors in finding a walkable place to live. Walk Score is a number between 0 and 100 that	• Increase miles and/or percentage of streets served by bike/pedestrian infrastructure (DOT) • Needs assessment/inventory of existing statewide bike paths/lanes • Needs assessment/inventory of existing municipal sidewalks, trails, multi-modal paths through comprehensive inventory. Integration of sidewalk requirements into subdivision regulations and ordinances.	• Metric: Percent of students walking, biking, and carpooling to school • Metric: Walk Score Index (http://www.walkscore.com/) • Establish Committee to identify infrastructure gaps and viable funding sources for projects • Establish Committee to address sidewalk infrastructure improvement needs and funding sources. • % population with access to multi-modal transportation	• Per-capita $ on energy for transportation (tracked by Energy and Climate Collaborative) • Collaboration with DOT/Districts/FHWA to ensure future infrastructure improvements support multi-modal transportation • Collaborate with DOT/Municipalities/Districts to integrate multi-modal principles into future infrastructure projects. • Increased supply of affordable

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		forms(3,4);	measures the walkability of any address. (Also Transit Score and Bike Score) • % population with access to multi-modal transportation (source: DOT) • The Cooperative Alliance for Seacoast Transportation (COAST) has served the seacoast region of New Hampshire since 1981. In that time, COAST buses have carried over 10 million passengers and traveled over 6.5 million miles (8, pg. 22) • VMT/capita (DOT tracks VMT)	• % population with access to multi-modal transportation (source: DOT) • Continued monitoring of Transit Ridership across all programs statewide. Expansion of existing transit routes (miles/stops added). • VMT/capita (DOT tracks VMT)	(source: DOT) • Identification of new/alternative transit funding sources in addition to FTA funds • VMT/capita (DOT tracks VMT)	housing within closer proximity to employment and transit centers • % population with access to multi-modal transportation (source: DOT) • VMT/capita (DOT tracks VMT)
Water Infrastructure	DES Strategic Plan NH Water Resources Primer Water Infrastructure Needs Assessment Water Demand/Consumption Estimates The Sustainability of New Hampshire's Surface Water	Protect drinking water supply intake areas (23) Protect/retain future potential supplies (both surface water and groundwater) (23, 24) Explore opportunities for strategic interconnections (inc resiliency) (23) Invest in community on-site wastewater disposal systems to support compact development within community centers (23, 49) Increase water conservation & energy efficiency of infrastructure (23, 49) Invest in maintenance/inc capacity of existing systems over expansion into new areas (10)	• % wastewater facilities @ 90% capacity (DES) • 36% of NH residents rely on private wells (23, pg. 8-3) • Typically individual private wells, represents the largest use of groundwater in New Hampshire at approx. 45 million gallons/day (23, 1-18) • % drinking water facilities @90% capacity (DES) • % pop served by public water supply (requires updating of service area maps to be analyzed against census pop data) • % public water suppliers requiring bulk water deliveries (indicator of stress on system supply versus demand; this data reported to DES) • 75 municipalities have adopted ordinances to protect aquifers, public wells, or other groundwater resources (23, pg. 8-13) • Trend: water supply reserves may be stressed by more severe & more frequent drought conditions with changing weather patterns	• % public water suppliers requiring bulk water deliveries (indicator of stress on system supply versus demand; this data reported to DES)	• $ invested in public well-water and dw systems • change in energy use per unit of well-water or dw processed (not sure if this is currently collected by anyone) • Metric: Ratio of storm-water capture and retention onsite to runoff diverted to sewers or streams/rivers (especially for large developments and parking lots) • Metric: Percent of storm-water runoff on public streets captured by "green street" infrastructure. • Metric: Increase of pervious type pavements for parking	• % pop served by public well-water • % pop served by public dw (not including small systems?)
Environment	DES Strategic Plan Forest Management Plans Various Local Watershed, River, Lake Management Plans Local Open Space Plans NH Coastal Program	Increase water conservation (23, 49) Maintain flood storage capacity with development (23, 49) Protect riparian areas/maintain vegetated buffers to reduce impacts of development on water quality and habitat (23, 29) Preserve natural hydrologic processes (infiltration and evapotranspiration of rain water, quantity & timing of rain runoff from	• Current amount (%) of important natural service land (possibly based on updated Natural Services Network GIS data layers) that is protected, developed, "in play" to be addressed by zoning/regs/outreach and individual choice • 34 New Hampshire Municipalities have post-construction storm-water management regulations in place • .167 Acres of agricultural, natural resource land, statewide, lost annually to development per resident (HUD Flagship Indicators)	• Initiate public outreach and education workshops at the State, Regional, and local level(s) geared towards informing citizens and municipal volunteers about the positive environmental, economic, and health implications of post-construction storm-water management regulations. • Initiate public outreach and education workshops at the	• Upon completion of public outreach/education initiatives, the Regional Planning Commissions, in conjunction with NHDES, visits municipal Planning Board's, Board of Selectmen/City Council in order to discuss the potential update of municipal regulations to address storm-water management. • Visit local Planning Boards and	• % Natural Service land protected (change in) • Addition of current storm-water Management protocols to municipal regulations across the State. Potential outcome is reduction of storm-water contaminants, improvement of environmental, economic, and population health as well as a reduction of Impervious cover per capita (change in) • Decrease loss of State

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		land, minimize pollutants to protect water quality) (23, 28, 29, 33, 34) Minimize impervious surfaces (23, 29)	• (One House per acre= 20% impervious cover; Runoff acre= 18,700 ft3/yr; Runoff/unit/18,700 ft3/year) (4 Houses per acre = 38% Impervious Cover; Runoff/acre = 24800 ft3/year; Runoff/unit = 6,200 ft3/year) (8 Houses per acre = 65% impervious cover; Runoff/acre = 39600 ft3/year; Runoff/unit = 4950 ft3/year) (http://www.epa.gov/smartgrowth/pdf/protect_water_higher_density.pdf , pg. 13) • The NH Coastal Watershed encompasses 820 square miles of land area. There are17 communities within the Coastal Zone (representing 262 square miles) and 25 communities within the Coastal Watershed (representing approx. 600 square miles)	State, Regional, and local level(s) geared towards informing citizens and municipal volunteers about the negative environmental, economic, and social implications of farmland/natural resource land loss in NH	municipal staff to discuss and provide potential regulative updates aimed at preserving agricultural/natural resource lands which may otherwise be lost to development.	Agricultural/natural resource lands to development by 25%
Economic Development	Comprehensive Economic Development Strategies (CEDS) Report on Historic Preservation and Economic Development Downtown Plans State Historic Preservation Plan National and State Register	4) The preservation of historical resources creates new jobs, revitalizes downtowns, provides affordable housing and supports heritage tourism. A wide range of demographic, economic, social and political trends shape resource protection in the State and lead to the success of traditional development patterns espousing the livability principles. Tools employed to promote these principles include demolition review ordinances; community revitalization tax relief incentives (79-E), neighborhood heritage districts and traditional local historic districts, and the recent study of sustainability and historic preservation. 5) The National and State Registers of Historic Places are a listing of significant properties in New Hampshire. Purely honorary and without regulatory restriction unless federal funding, permitting, or licensing occurs, listing opens up the opportunity for various funding including Moose Plate grants, Certified Local Government grants, LCHIP grants and others. Properties recognized on the lists run the gamut from individual properties to large historic districts espousing the livability principles within their borders. 2) Economic measures were quantified to justify the role historic preservation plays in the US economy to strengthen traditional	• Market value of agricultural and forestry products • NH total acres of land in farms is 470,000 acres (2011 USDA State AG Overview) • National Historic Preservation Tax Incentives: 33,773,008.00 • State Register: 270 National Register: 730 • Local Historic Districts: 56 Neighborhood Heritage Districts: 0	• market value of agricultural and forestry products • NH total acres of land in farms is 470,000 acres (2011 USDA State Agricultural Statistics, IX-5) • National Historic Preservation Tax Incentives: 33,773,008.00 (NHDHR, Peter Michaud) • State Register: 270 National Register: 730 (Mary Kate Ryan, State Survey Coordinator, NHDHR, Peter Michaud, NHDHR) • Local Historic Districts: 56 Neighborhood Heritage Districts: 0 (46, NHDHR)	• Metric: Number of historic properties renovated compared to number abandoned and demolished. • NHPTI: 5% increase (NHDHR past trends) • State Register: 10% increase National Register: 1.5% increase (NHDHR past trends) • Local Historic Districts: 56 Neighborhood Heritage Districts: 2 (pilot project under NHHFA) (NHDHR past trends)	• market value (change in) of agricultural and forestry products • acres (change in) in active agricultural production • NHPTI: 5% increase (NHDHR past trends) • State Register: 10% increase National Register: 1.5% increase (NHDHR past trends) • Local Districts: 58 Neighborhood Heritage Districts: 3 (NHDHR past trends)

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		development patterns in our communities. This can be applied to NH communities as well. Economic measurements including jobs/household income, property values, heritage tourism, environmental measures, and downtown revitalization; all important factors in quantifying successful communities espousing traditional settlement patterns; Promotes a regional perspective on local economic development planning(1); The National Preservation Tax Incentives Program through the IRS and NPS and administered through the New Hampshire Division of Historical Resources has a total investment in completed rehabilitation and associated new constriction since 2000 of $33,773,008.00				
Climate Change Impacts	Innovative Land Use Handbook DES Strategic Plan NH Wildlife Action Plan NH Climate Action Plan Hazard Mitigation Plans	Address changing risks of flood/drought, particularly within areas of high-density existing development and at drinking water and wastewater facilities (23, 49, 50) The NH Climate Action Plan does address historic preservation by discussing how embodied energy(49) Identify potential hazard areas and direct future development of these areas to reduce the risk of life and property(5, 50)	• Drinking water and wastewater facilities at risk of flooding (particularly with increasing storm severity & inundation) - (DES doing analysis for DW facilities) • Emissions in 1990 were 15.79 MMTCO2e/year and 22.45 in 2005. Projections indicate higher than 40 per year in 2050.(49, pg. 22) • The Land Conservation Plan for Coastal Watersheds (NHEP/NHCP, 2006) identified 190,400 acres (34%) of land in the coastal watersheds that provide essential habitat and/or ecological services and that should not be developed. Less than a quarter of that area is protected today • FEMA and NH HSEM has data that can be used to show trends of hazard areas	• Annual review of local Hazard Mitigation Plans	• Prepare local Hazard Mitigation Plan updates every 5 years to include development trends and conservation efforts	• Total GHG emissions per capita • Increase the number of NFIP policies for properties within the floodplain.
Energy Efficiency and Green Building	Energy Plans LEED and Energy-star Certification Smart Growth Toolkit Institute for Sustainable Infrastructure Architecture 2030	Increase energy efficiency of drinking water and wastewater facilities (49, 60) Encourage development patterns that support walk/bike/public transportation (49) Provide incentives for (or require achieving a certain level) for high performing, energy efficient projects (2); Encourage and recognize sustainability is new development and renovation of all types - commercial, retail, housing, schools, neighborhoods (2,	• Currently, there are 42 LEED Certified Projects in New Hampshire, 8 of which are LEED Platinum (USGBC NH Chapter, NH Certified LEED Projects List) • Many rating systems exist, high cost for obtaining certification. See projects setting goals and incorporating without going for certification • The estimated potential annual savings and productivity gains are $6 - $14 billion from reduced allergies and asthma, $10 - $30 billion from reduced sick building syndrome symptoms, and $20 - $160 billion from direct improvements in	• Town CIP- to implement some of the items identified in the Energy Plans • Create information toolkit about rating systems and ways to incorporate elements into projects. Identify structural and/or financial incentives to be included with the toolkit. • Establish rating system, learning curve on what/who/how to implement • Adopt a target of reducing	• Return on Investment for measures taken. The energy savings and cost savings realized through implementation of the Energy Plan. • % change in energy used by public ww and dw utilities per unit processed • Metric: Percent of new construction that is LEED certified. Metric 2: Percent of energy from renewable sources. (The region has	• Return on Investment for measures taken. The energy savings and cost savings realized through implementation of the Energy Plan. • Adopt a target of reducing energy use in all new buildings of 90% below the national average and renovate an equal amount of existing buildings to meet the same standards. . (57,

Related Plan Components	Existing Resources	Existing Policies, Principles, Goals, and Questions to be Addressed	Metrics			
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		49) Promote and recognize sustainability in construction and rehabilitation of infrastructure (4) Move towards carbon neutral buildings/development by 2030 (5) Identify ways in which communities can reduce their energy needs & consumption(1);	worker performance due to green building that are unrelated to health. • Currently in development. First rating system geared towards infrastructure projects • Problem:. Solution: By 2035 75% of the built environment will be new or renovated. Challenge: to be carbon Neutral by 2030 through sustainable design and renewable energy. (57, www.architecture2030.org)	energy use in all new buildings of 70% below the national average and renovate an equal amount of existing buildings to meet the same standards. (57, www.architecture2030.org)	historically been based around mills and water power. Many of these mills still exist. Can utilize the same source of energy (the area's rivers) to generate electricity at a local, small scale. Many of the mills in Augusta, GA have converted their turbines to generate electricity, producing enough to power many homes) • Create information toolkit about rating system and ways to incorporate into projects • Adopt a target of reducing energy use in all new buildings of 80% below the national average and renovate an equal amount of existing buildings to meet the same standards. (57)	www.architecture2030.org)

Traditional Settlement Patterns & Development Design TASC:

Existing Resoruces Worksheet

Existing Resource					Related Plan Chapter or Appendices								
Ref #	Agency/ Organization	Resource	Description of Resource	Resource Link/Location	Land Use	Implementation	Housing	Transportation	Water Infrastructure	Environment	Economic Development	Climate Change Impacts	Energy Efficiency and Green Building
1	SNHPC	Piscataquog Watershed Land Conservation Plan	This plan is specifically directed to benefit and provide guidance to the eleven municipalities located within the watershed, including local and state agencies, conservation entities, land trusts, and other related organizations actively involved in protecting this ecologically important watershed	http://snhpc.org/index.php?page=reports#PWLCP	x	x				x			
2	NHDES	Community Center Areas & Key Destinations GIS data, and Use of these data to calculate Sprawl Indicator Measures	a collaborative effort led by NHDES to develop new data and define specific measures to assess changing patterns of land use; see Community Centers and Key Destinations data at GRANIT		x							X	
3	NHDES	NH Coastal Program	coastal watershed land use planning recommendations, conservation planning	http://des.nh.gov/organization/divisions/water/wmb/coastal/index.htm	x					x			
4	PlanNH	Vibrant Villages	VV NH presents case studies from around the Granite State that contribute to vibrant, healthy communities.	http://www.vibrantvillagesnh.com/	x	x	x						x
5	AIA	Report on Social Capital	Report by Lewis Feldstein of the NH Charitable Fnd of why people are better in communities	http://www.nhcf.org/page.aspx?pid=209	x						x		
6	LOCAL	Local Master Plans	RSA 674:2	http://www.gencourt.state.nh.us/rsa/html/lxiv/674/674-2.htm	x	x							
7	LOCAL	State and City Regulations	State and local Ordinances and Regulations		x	x							
8	SNPHC	Livable Walkable Toolkit	incorporating livable, walkable community principles into local, state and regional planning programs, policies and statutes	http://snhpc.org/index.php?page=land_use#LiveWalk	x			x					
9	LOCAL	Arts and Cultural Plans									x		
10	NHDES	DES Strategic Plan	an action plan on land use	http://des.nh.gov/organization/commissioner/strategic-plan/documents/sp-package.pdf	x		X	X	x	x		X	x
12	NHDES	Innovative Land Use Handbook	To address the need for guidance and technical assistance on Innovative Land Use Controls	http://des.nh.gov/organization/divisions/water/wmb/repp/innovative_land_use.htm	x	x	X	X		X		X	x
13	EPA	Land use and floodplain EPA regulations	Regulations explain the technical, operational, and legal details necessary to implement laws	http://www.epa.gov/lawsregs/		x				X			
14	LOCAL	Local plans and Integrated Permitting Process				x							
15	EPA	Smart Growth Index	The Smart Growth Index (SGI) is a GIS sketch model for simulating alternative land-use and transportation scenarios, and evaluating their outcomes using indicators of environmental	http://www.epa.gov/smartgrowth/topics/sg_index.htm		x							

Existing Resource					Related Plan Chapter or Appendices								
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			performance										
16	EPA	Smart Growth Toolkit	The Smart Growth Implementation Toolkit is a set of practical tools to help communities grow smarter.	http://www.smartgrowthamerica.org/leadership-institute/implementation-tools		x							x
17	AIA Concord Housing Commission	Cottage Housing Charrette	A design study for particular sites in Concord, NH that can be used as a template for compact design on other sites. Winner of Suburban Density Award from NHHFA, 2012.	https://docs.google.com/folder/d/0B8yu3bDJB3UXajFDT25IZFlkdjA/edit			x						x
18	NHHFA	Fair Housing Needs Assessments	A Housing Demand Model for regional housing needs analysis in NH	http://www.nhhfa.org/rl_needsassess.cfm			x						
19	FED/LOCAL	Federal, State, city regulations					x						
20	REGIONAL	Regional Transportation Plans						x					
21	LOCAL	Local Transportation Corridor Plans						x					
22	LOCAL	Pedestrian/Bike Plans						x					
23	NHDES	NH Water Resources Primer	provides current information and numerous recommendations for all aspects of water resource management and protection	http://des.nh.gov/organization/divisions/water/dwgb/wrpp/primer.htm					x	X		X	
24	NHDES	Favorable Gravel Well Analysis	identifies areas of stratified-drift aquifers in New Hampshire that may be suitable as new public water supply sources, updated in 2010	http://clca.forestsociety.org/pdf/fgwa.pdf	x				x	X			
25	NHDES	Water Infrastructure Needs Assessment	estimated costs to maintain and improve NH's drinking water, wastewater, and stormwater management infrastructure	http://des.nh.gov/organization/divisions/water/dwgb/documents/dw-infrastructure-exec-smry.pdf					x				
26	NHDES	Water Demand/Consumption Estimates	developed by USGS for the Stressed-Basins Project and water resource planning	http://pubs.usgs.gov/of/2009/1168/					x				
27	NHDES	Stressed-Basins Project	screening analysis by NHGS comparing water demand versus availability across the entire state.	http://des.nh.gov/organization/commissioner/gsu/nhhdp/stressed_basins.htm					x				
28	NHDES	Fluvial-Erosion Hazard Analyses	identifies areas of high risk along certain river corridors	http://des.nh.gov/organization/commissioner/gsu/fegh/index.htm	x					x		X	
29	NHDES	Various Watershed, River, Lake Management Plans	provide watershed specific data, objectives, and management recommendations.	http://des.nh.gov/organization/divisions/water/wmb/was/watershed_based_plans.htm; http://des.nh.gov/organization/divisions/water/wmb/rivers/desigriv.htm; http://des.nh.gov/organization/divisions/water/wmb/lakes/lake_water.htm; http://des.nh.gov/organization/divisions/water/dwgb/dwspp/reports/part1.htm; http://des.nh.gov/organization/divisions/water/dwgb/dwspp/nh_source.htm	x					x			

Existing Resource					Related Plan Chapter or Appendices								
Ref #	Agency/ Organization	Resource	Description of Resource	Resource Link/Location	Land Use	Implementation	Housing	Transportation	Water Infrastructure	Environment	Economic Development	Climate Change Impacts	Energy Efficiency and Green Building
30	NHDES	305(b)/303(d) Water Quality Assessments	a report (commonly called the "305(b) Report"), that describes the quality of its surface waters and an analysis of the extent to which all such waters provide for the protection and propagation of a balanced population of shellfish, fish, and wildlife, and allow recreational activities in and on the water	http://des.nh.gov/organization/divisions/water/wmb/swqa/2012/index.htm						x			
31	LOCAL	Local Lakes/Rivers Plans								x			
32	LOCAL	Southeast Watershed Alliance	a coordinating entity for coastal watershed communities developing recommendations for increased control of nutrient pollution to Great Bay	http://www.southeastwatershedalliance.org	x				x	x			
33	NHDES	Governor's Water Sustainability Commission	charged with developing a plan to help ensure New Hampshire has a safe, clean and sustainable water supply for the future	www.nh.gov/water-sustainability/	x				x	x		x	
34	NHDES	Water Quality Restoration Plans	plans to reduce pollutant loading to impaired waters	http://des.nh.gov/organization/divisions/water/wmb/tmdl/categories/publications.htm		x				x			
35	NHDES	Piscataqua Region Estuaries Partnership	management plan & recommendations, indicator/measures work and The Piscataqua Region 2010 Comprehensive Conservation Management Plan	http://prep.unh.edu/resources/pdf/piscataqua_region_2010-prep-10.pdf	x					x			
36	FEMA/DOT	NH Stone Culverts Asset Management Manual	This document is a preservation plan for stone highway culverts in New Hampshire. It does the following: Provide culvert owners, and other citizens, information to aid their understanding of the cultural importance of New Hampshire's historic stone culverts and to support their efforts to identify, maintain and preserve them; Provide a practical inspection and maintenance plan with specific actions for culvert owners to take to prevent deterioration and damage to historic stone culverts; Provide guidelines for repairing historic stone culverts that comply with the Secretary of the Interior's Standards for the Treatment of Historic Properties.	http://www.nh.gov/dot/org/projectdevelopment/environment/documents/CulvertManagementManual.pdf					x	x			
37	NHDES	The Sustainability of New Hampshire's Surface Water	The Sustainability Initiative will develop environmental and programmatic indicators and recommendations to address the eight key tools, strategies, and issues identified in this document.	http://des.nh.gov/organization/divisions/water/wmb/rivers/rmac/documents/sustainability_initiative.pdf	x				x	x			
38	LOCAL	Local Open Space Plans			x					x			
39	STATE/LOCAL	Agricultural Commissions								x			
40	EPA	Total Max Daily Loads Assessments	A Total Maximum Daily Load, or TMDL, is a calculation of the maximum amount of a pollutant	http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/index.cfm	x				x	x			

Existing Resource					Related Plan Chapter or Appendices								
Ref #	Agency/ Organization	Resource	Description of Resource	Resource Link/Location	Land Use	Implementation	Housing	Transportation	Water Infrastructure	Environment	Economic Development	Climate Change Impacts	Energy Efficiency and Green Building
			that a waterbody can receive and still safely meet water quality standards.										
41	**LOCAL**	Comprehensive Economic Development Strategies (CEDS)									x		
42	**LOCAL**	Downtown Plans				x	x	x			x		
43	**STATE/DHR**	State Historic Preservation Plan	the plan lays out priorities and directions for preserving and promoting New Hampshire's historical and archeological resources during the next five years.	http://www.nh.gov/nhdhr/programs/plan.htm							x		
44	**FED/STATE**	National and State register	The National Register of Historic Places is the official list of the Nation's historic places worthy of preservation	http://www.nh.gov/nhdhr/programs/national_register.html							x		
45	**LOCAL**	Heritage Commissions/Historic District Commissions									x		
46	**ACHP.gov**	Report on Historic Pres. on ED	This study, commissioned by the Advisory Council on Historic Preservation, seeks to identify a finite number of indicators that can be used to regularly, consistently, meaningfully, and credibly measure the economic impact of historic preservation over time.	http://www.achp.gov/docs/economic-impacts-of-historic-preservation-study.pdf							x		
47	**NHDHR/NHPA /NHHFA**	HUD Community Challenge Grants	neighborhood heritage districts	http://www.nh.gov/nhdhr/documents/neighborr_hert_handbook.pdf							x		
48	**NHDHR**	Plymouth State University - Appendices	Report on the Regulatory history of local historic districts in NH, what is out there and what are the trends?	hard copy avaialbe at NHDHR 19 Pillsbury Street, Concord, NH							x		
49	**NHDES**	NH Climate Action Plan	aimed at achieving the greatest feasible reductions in greenhouse gas emissions while also providing the greatest possible long-term economic benefits to the citizens of New Hampshire.	http://des.nh.gov/organization/divisions/air/tsb/tps/climate/action_plan/nh_climate_action_plan.htm	x	X	X	X	X	X		x	x
50	**NHDES**	NH Climate Change Adaptation Planning	Through its partnerships, the Coastal Program is working to engage local decision-makers in adaptation planning to minimize damage and increase preparedness for these natural hazards.	http://des.nh.gov/organization/divisions/water/wmb/coastal/hazards-adaptation.htm	x	X				X		x	
51		Hazard Mitigation Plans										x	
52	**NHDES**	Mayor's Challenge for Water reduction										x	
53	**NH Fish and Game**	NH Wildlife Action Plan	The plan provides New Hampshire decision-makers with important tools for restoring and maintaining critical habitats and populations of the state's species of conservation and management concern.	http://www.wildlife.state.nh.us/Wildlife/wildlife_plan.htm	x	X				X		x	
54	**NHDES**	Local Energy Committee Working	the Local Energy Committee Working Group as	http://nhenergy.org/index.php?title=									x

Existing Resource					Related Plan Chapter or Appendices								
Ref #	Agency/ Organization	Resource	Description of Resource	Resource Link/Location	Land Use	Implementation	Housing	Transportation	Water Infrastructure	Environment	Economic Development	Climate Change Impacts	Energy Efficiency and Green Building
		Group	well as participants from other energy related committees and organizations met monthly to assess the needs, barriers and opportunities in NH's communities to address local level energy issues and solutions	Local_Energy_Committee_Working_Group									
55	**LOCAL**	Energy Plans											x
56		Institute for Sustainable Infrastructure	Much like LEED, but for infrastructure	http://www.sustainableinfrastructure.org/									x
57		Architecture 2030	Architecture 2030, a non-profit, non-partisan and independent organization, was established in response to the climate change crisis by architect Edward Mazria in 2002. 2030's mission is to rapidly transform the U.S. and global Building Sector from the major contributor of greenhouse gas emissions to a central part of the solution to the climate change, energy consumption, and economic crises.	www.architecture2030.org/									x
58	**USGBC**	LEED and Energy Star Certification	LEED certification provides independent, third-party verification that a building, home or community was designed and built using strategies aimed at achieving high performance in key areas of human and environmental health	www.usgbc.org/LEED/									x
59	**USGBC: NH**	US Green Building Council – NH Chapter	USGBC New Hampshire envisions a built environment where we live, prosper and play within the sustainable cycles of nature.	http://usgbcnh.org/									x
60	**EPA**	EPA guidelines on drinking and wastewater facilities (& new guidance on energy efficiency at these facilities)	The Environmental Protection Agency sets standards that, when combined with protecting ground water and surface water, are critical to ensuring safe drinking water.	http://water.epa.gov/drink/standardsriskmanagement.cfm									x
61	**AIA**	AIA.org Regional Urban Design Committee "Livability 101"	The how and why on livability	http://www.aia.org/aiaucmp/groups/aia/documents/pdf/aias077946.pdf									x
62	**Ross Chapin Architects**	Pocket Neighborhoods: Creating Small Scale Community in a Large Scale World	presentation on pocket neighborhoods for concord										x
63		Pocket neighborhoods guide											x
64	**NH DES**	Storm water Management plans	The New Hampshire Stormwater Manual was developed as a planning and design tool for the communities, developers, designers and members of regulatory boards, commissions, and agencies involved in stormwater programs in New Hampshire	http://des.nh.gov/organization/divisions/water/stormwater/manual.htm					x	x		x	x
65	**PLAN NH**	PlanNH library – 50 charrettes	Resource of examples of good design and livable neighborhoods	http://plannh.org/why-does-plan-nh-do-this									x
66	**NHDES**	2010 Flood Impact Survey for	defines the range of historic flood-related impacts						x				x

Existing Resource					Related Plan Chapter or Appendices								
Ref #	Agency/ Organization	Resource	Description of Resource	Resource Link/Location	Land Use	Implementation	Housing	Transportation	Water Infrastructure	Environment	Economic Development	Climate Change Impacts	Energy Efficiency and Green Building
		Community Water Systems in New Hampshire	encountered by community water systems, identifies some potential causes of those impacts, and assesses general costs of damages										
67	**USEPA**	Planning for Sustainability: A Handbook for Water and Wastewater Utilities.	An introduction for water and wastewater utilities on approaches for incorporating sustainability considerations into planning.	The handbook can be found online at http://water.epa.gov/infrastructure/sustain/upload/EPA-s-Planning-for-Sustainability-Handbook.pdf. Slides from webinars at http://www.client-ross.com/sustainability-planning/					x	x		x	
68	**State**	Preserving Community Character		http://www.bedfordnh.org/pages/BedfordNH_BComm/Historic/NHPA_Planning_Manual-06.pdf									
69	**New Hampshire Center for Public Policy Studies**	What is New Hampshire? A collection of data for those seeking answers	Data relating to people, economy, public services, and local governance	Hard-copy is available from NH Center for Public Policy Studies			x	x			x	x	x

Housing & Transportation Choices TASC:

Research Matrix

Related Plan Components	Existing Resources	Existing Policies, Principles, Goals, and Questions to be Addressed	Metrics			
			Baseline Data: Existing Conditions and Trends	Short Term Planning Process (1-3 Years)	Mid Term Benchmarks (3-5 Years)	Long Term Implementation Effect (5-20 Years)

Vision	**Local**
	• City and Town Master Plans
	Regional
	• Regional Planning Commission Long Range Planning Documents
	State
	• Statewide transportation plans (Long Range Plan, Ten Year Plan, Highway Safety Improvement Plan, Rail Transit Plan)
	• NH Housing Finance Authority – Resource Library
	• "What is NH", nhpolicy.org
	• Natural Resource plans
	  ○ Land Conservation Plans
	  ○ Water Resources
	• Climate Action Plan
	• Coastal Adaptation Plan
	• Wildlife Adaptation Plan
	• Statewide business plan
	• Existing Statutes; e.g. RSA 9A, 9B, 79
		• Demographic trends indicate need for diverse planning and enhanced choices in housing & transportation.
		• Preservation and enhancement of quality of life for state's residents through better housing and transportation choices
		• How will the dramatic increase in older population of New Hampshire affect housing, transportation, and the economy?
		• Transportation excellence enhancing the quality of life in NH – Guiding vision of NHDOT
		• Existing state policy statements and guiding information from RSAs
		• Housing and transportation choices are often tied to how the state performs economically
		• Reduce greenhouse gasses by 80% by 2050
			• NH has the country's third highest median age.
			• Desire to keep rural character but also increase tax base.
			• GSG emissions 1990-2005 increase			

Land Use	• Municipal Master Plans • Zoning Ordinances and Subdivision Regulations • New Hampshire's Changing Landscape • Land Conservation Plans, Coastal – Tom • NH Climate Action Plan • Transportation Climate Initiative • Innovating Land Use Guidebook - DES	• Promote compact development and infill development to reduce car trips and encourage other modes of transportation. • State Statutes • How to maintain rural character but meet increased need for services and maintain tax base? • Preserve undeveloped land to maintain fixed carbon. • Promote development in areas that are serviced by transit or promote development in a way that is conducive	• Data related to development patterns, sprawl, lack of infill • Sprawl Indicator Measures – DES document on GRANIT • Population is growing less • DHHS Municipal Survey	• Educating land-use boards on the negative impacts of sprawl • Review of ordinances that hinder beneficial development or allow unwanted development		
Implementation	• Municipal CIPs • NHDOT Balanced Scorecard • State Ten Year Plan • Zoning Ordinances and Subdivision Regulations	• Are there local, regional, state policy barriers to implementation? e.g. poor planning & zoning regulations • Poor economic performance at the local, regional and state level limits the possibility for implementation • Are plans, policies and documents developed during the planning process actually implemented?	• Economic Indicators, market demand • Location of existing town centers, from sprawl indicator measures • Low Income Housing Tax Credits • HOME investment partnerships • Tax-exempt bonds • Community Development Block Grants • Community Development Improvement Program	• Guidance to overcome barriers (real & perceived)		
Housing	• Ewing, et. al., "Growing Cooler: The Evidence on Urban Development and	• Promote residential development in areas with existing infrastructure to	• Declining school enrollment numbers	• Encourage policies to provide affordable housing	• Units of affordable housing and smaller homes	• More compact development, less sprawl

Related Plan Components	Existing Resources	Existing Policies, Principles, Goals, and Questions to be Addressed	Metrics			
			Baseline Data: Existing Conditions and Trends	Short Term Planning Process (1-3 Years)	Mid Term Benchmarks (3-5 Years)	Long Term Implementation Effect (5-20 Years)

	Climate Change," ULI, 2007.
	• Regional Housing Needs Assessments
	• Regional Workforce Housing Fair Share Analysis
	• State and Entitlement Consolidated Plans
	• NH Housing Finance Authority
	• Housing Market Analyses
	• Climate Action Plan
	• NH Energy Code Compliance Roadmap
	• New Hampshire Housing Finance Authority Strategic Plan
	• Achieving Smart Growth in New Hampshire, A Guide Book
		reduce tax burdens.
		• Environmental Impact
		  ○ Develop homes in a compact way to reduce VMT and CO_2[i]
		  ○ Develop homes in existing urban areas to reduce "drive till you qualify."[ii]
		• State Statute – workforce housing, energy codes
		• Enable seniors to remain in their own homes with high quality of life
		• Adequate supply of affordable rental housing for low and very-low-income, elderly, and disabled people.
		• Adequate supply of workforce housing
		• Maximize energy efficiency in residential buildings
		• Compliance with current energy codes for new construction
		• Inclusionary zoning that enables the development of housing that can cater to the needs of varied income levels is encouraged, especially workforce housing near where people work
		• Population has increased more in suburban areas resulting in low density land use
		• Promote and support safe, affordable and needed housing and related services for New Hampshire families and individuals through the efficient use of resources thereby contributing to the economic and social development of the State and its communities.
			• Existing conditions and trends too numerous to list. Visit the NHHFA website (www.nhhfa.org) and Research Library for detailed housing data, existing conditions and trends.
			• Home prices have declined just over 20% since 2007 and the number of home sales declined by nearly 50% between 2005 and 2011.
			• Foreclosure activity in New Hampshire for the period January through June 2012 is down about 3% from the same period in the prior year. However, foreclosures remain a significant and ongoing problem for the housing market.
				• Encourage development with a mix of housing and employment opportunities
				• Encourage zoning that allows for smaller homes better suited to two- and three-person households
				• Encourage housing and mixed use development that meets the compact design principals found in RSA 9-B
				• Identify and encourage the adoption of local regulatory measures that facilitate the renovation of existing housing to better suit the needs of a population aging in place
					constructed
					• Changes in regional VMT/length of commute
					• Increase household income through either economic opportunity or income subsidy to reduce housing cost burden
						• Reduced greenhouse gas production
						• Increased housing near areas served by transit
						• Increased housing near employment centers
						• Increased diversity of housing

Transportation	• State Transportation Plans (Long Range Plan, Ten Year Plan, Highway Safety Improvement Plan, Rail Transit Plan) • Statewide Study of Community Transportation • State Coordinating Council/Regional Coordination Councils for Community Transportation • NHDOT Balanced Scorecard • US Census Bureau 'On the Map' Analysis Tool • Center for Neighborhood Technology's 'Housing & Transportation Affordability Index'.	• Sustainable funding source for transportation infrastructure including transit is critical • Transportation Planning in the State needs to be proactive as well as reactive • A consolidated vision for Community Transportation which includes public policy development supporting transportation services as a core community asset.	• Very poor East-West transportation linkages in the state. • Transportation funding is not increasing at the same rate as cost. • Increasing demand for public transit in the state • Approx. 33% of GHG emissions are from transportation • From 1990 to 2005 gasoline use rose by 42% and diesel use by 105%	• Development of Public/Private partnerships to work with transportation resources and programs • Work with GSF and the NH Energy Climate Collaborative to help implement TLU actions in the CAP. • Work with NHDOT to determine metrics to best evaluate sustainability.	• Increased transportation options for NH citizens and increased financial health for the state's transportation resources	• More livable and sustainable communities • Comprehensive integrated multimodal transportation system.

Related Plan Components	Existing Resources	Existing Policies, Principles, Goals, and Questions to be Addressed	Metrics			
			Baseline Data: Existing Conditions and Trends	Short Term Planning Process (1-3 Years)	Mid Term Benchmarks (3-5 Years)	Long Term Implementation Effect (5-20 Years)
Water Infrastructure	• NH Climate Action Plan – 2009 • Water Infrastructure Needs Assessment • Water Sustainability Commission Plan http://www.nh.gov/water-sustainability • Aquifer Protection BMPs	• Maintenance of water infrastructure is essential to the performance of the local and state housing & transportation networks i.e. culverts, drainage, storm water run off				
Environment	• NH Climate Action Plan (2009) • NH Coastal Program • DES Air Resources Division • Transportation Climate Initiative	• The states will work together to promote sustainable communities that expand transportation options, promote economic prosperity, enhance natural resource protection, strengthen communities, and minimize environmental impacts. They will promote these communities through enhancement of state-level transportation policies that combine a smart growth land use planning approach with sustainable development concepts, and will work in partnership with community development, economic growth, and housing and land use agencies at the federal, local, and regional levels to foster this development. • 80% reduction in GHG emissions below 1990 baseline by 2050. • Adaptation plans being developed for coastal areas, health providers, and fish and game to address inevitable impacts of climate change including extreme weather events, rising sea level, and warmer climate	• TCI states are currently evaluating what data is available to support development of 11 core metrics			
Economic Development	• Local/Regional Economic Development Plans (CEDS, Town Economic Development Plans/Economic Chapter of Master Plans) • State Business Assistance programs (DRED, CDFA, Brownfield Funds) • Documents regarding emerging markets/Opportunities (NH Energy, Environmental and Economic Development Benchmark Report, Emerging Green Construction in New Hampshire, Green Manufacturing in New Hampshire) • Various Data Sources (Employment Projections, Community Profiles, Childcare in NH – ELMI, NH Demographic Trends in the 21st Century by UNH Carsey Institute)	• With employers looking for access to rail, access to highways, access to broadband, and access to strong labor pools, how will NH compete against other states that have made greater capital investments in infrastructure? • Population increase has gone from increases by 20% or more from 1960s to 1990s, down to around 6% from 2000-2010. • What is the current economic vision articulated in existing plans (CEDS, local econ plans, etc.)? • What infrastructure is needed (hard/soft/financial)? • What can be done to retain or strengthen the standing of current employers and economic sectors?	• Lots of out-of-state commuting, such as 1-4 residents commuting to Massachusetts from the Nashua Region • Aging population and less people moving here means much less economic activity • Residential building permits increased by 2.2% to 7,702 between 2000 and 2005, then decreased by 72% between 2005 and 2009 • Local spending has grown in some towns and slowed in others, state spending is down resulting in an increase in property taxes as costs are “downshifted” to local governments	• Evaluate development and redevelopment potential • Evaluate economic indicators and data such as: commercial vacancy rates, median income, assessed value of commercial properties, unemployment rates, etc. • Ensure that local and state regulatory process is conducive to redevelopment	• Access to broadband and other services that businesses want	• Rail access in major cities, which businesses look for when they locate

Related Plan Components	Existing Resources	Existing Policies, Principles, Goals, and Questions to be Addressed	Metrics			
			Baseline Data: Existing Conditions and Trends	Short Term Planning Process (1-3 Years)	Mid Term Benchmarks (3-5 Years)	Long Term Implementation Effect (5-20 Years)
	• Workforce Training and Education Programs • Guide to Creating a Community Arts and Cultural Plan; and, Creative Economy Tool Kit (NH Creative Communities Network)					
Climate Change Impacts	• NH Climate Action Plan (2009)	• Storms and flooding predicted to increase so will need resilience of infrastructure to extreme weather events and rising sea levels • Health impacts include thermal stress, air quality degradation; infectious disease	• In next century sea level is projected to rise 7 to 14 inches if GHG is significantly reduced and 10 to 23 inches at current emission rates • NH has experienced 3 100-year floods since 2006	• Encourage the reduction of carbon footprints through: reuse, multi-modal transportation, compact development, green retrofitting, green building and infrastructure, etc. • Encourage the development of green jobs	• Monitor/track data on population/growth/economic changes	• Reassess effectiveness/initial policies and change as needed.
Energy Efficiency and Green Building	• NH State Building Code • NH Energy, Environmental and Economic Development Benchmark Report • Emerging Green Construction in New Hampshire • Green Manufacturing in New Hampshire • NH Better Buildings Program http://www.betterbuildingsnh.com/ • NH Energy Code Compliance Roadmap • NH Building Energy Code Collaborative • NH Homebuilders Association	• NH State Building Code provides standards for building construction in the state. • EEED Benchmark Report establishes benchmarks for where NH is at with regard to climate change • RGGI • PUC	• Energy expenditures have increased from 2005 to 2009 • Household energy expenditures and energy building codes have remained about the same • Spending per capita on transportation energy has gotten worse	• Encourage energy conservation • Encourage the use of green building BMPs • Encourage alternative energy development • Encourage reuse and redevelopment of properties, including brownfields • Encourage the growth of the “green” economy locally	• Monitor/track data on population/growth/economic changes	• Reassess effectiveness/initial policies and change as needed.

Natural Resource Functions and Qualities TASC:

Research Matrix

Related Plan Components	Existing Resources	Existing Policies, Principles, Goals, and Questions to be Addressed	Metrics			
			Baseline Data: Existing Conditions and Trends	Short Term Planning Process (1-3 Years)	Mid Term Benchmarks (3-5 Years)	Long Term Implementation Effect (5-20 Years)
Vision	• NH Water Resources Primer • NH Climate Action Plan • NH Forest Resource Assessment 2010 (Forest Action Plan) • New Hampshire's Changing Landscape 2010 – Population Growth, Land Use Conversion and Resource Fragmentation in the Granite State • Preserving Rural Character Through Agriculture, UNH Cooperative Extension • Perspectives on America's Forests Multiple Perspectives on the National Report on Sustainable Forests – 2003 • Governor's Water Sustainability Commission • Preserving Rural Character: The Agriculture Connection, Office of Energy and Planning Technical Bulletin #6, Winter 2000,	• Integrated Perspective: Recognize strong ties between natural resources (management and conservation) and other sectors (e.g., economic activity, tourism, forestry, climate, social); ensure that natural resource considerations are integrated with other sector discussions to avoid conflicting recommendations. (Sources: NH Climate Action Plan, NE Gov Conference Blue Ribbon Commission on Land Conservation Report, North Country RC&D Five year Plan) • People within Natural Systems: Recognize that humans live within ecosystems and that by working "with" natural systems, and with appropriate planning & measures to reduce impacts, manage resources, and prepare for changes, natural resource quality (air, water, habitat) can be improved and ecosystems can continue to function effectively to serve all purposes (this = sustainability, versus just discussing "protection" of natural resources, which implies having no impact, and thus is too limiting to many). (Sources: NHDES Strategic Plan, NH Water Primer, NH Wildlife Action Plan - "Taking Action for Wildlife") • Large, interconnected, "functional" blocks: Preserve large, contiguous blocks (> 50 acres), connect resources across the landscape (e.g., supports wildlife movement, scenic/recreational value) and maintain "working land" functions on protected lands (ag, forestry, fiber, recreation). (Sources: NE Gov Conference Blue Ribbon Commission on Land Conservation Report; NH Wildlife Action Plan; NH Forest Action Plan 2010) • Sustain and Promote Agriculture: "Sustaining Agriculture" planning to support continued and expanded agricultural activity; ensure that towns are "farm-friendly" and that ag can co-	• Current % land forested • Current % protected open space • Current % local food production • Current % land in agriculture • Current % ag land protected • Current numbers of farms and types of farms		• # towns with Conservation Plans based on Natural Resource Inventory and integrated into Master Plan, zoning, and regulations • # towns with plans for sustaining agricultural resources and activities integrated into Master Plan, zoning and regulations	• Change in % land forested • Change in % protected open space • Change in % local food production

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		exist with increased residential and non-residential development (Source: NH Coalition for Sustaining Agriculture). Attain 30% in-state production of food needs (Source: NH Food Security Plan - UNH Office of Sustainability; NH Coalition for Sustaining Ag) • Balanced Fiscal Policies: Fiscal policies should internalize environmental costs of actions (e.g., business choices, development impacts), and limit private economic gain from resources held in public trust. • Provide recreational opportunities that respond to changing demographics (age, ethnicity, underserved populations) (Source: SCORP 2012, forthcoming).				
Land Use	• NH Wildlife Action Plan - Habitat Landcover and Highest Ranked Wildlife Habitat by Ecological Condition, NH F&G • Conservation Design for Subdivision: A Practical Guide to Creating Open Space Networks (Randall Arendt, Island Press, 1996) • A Handbook on Sprawl and Smart Growth Choices for Southern New Hampshire Communities (SNHPC, August, 2002, • Various regional conservation and environmental management plans (e.g., Lake, Watershed, river management plans) as applicable, including, for example: ○ see full resource table for full list of identified plans ○ Quabbin to Cardigan Partnership ○ Lakes Region Conservation Plan (available soon) ○ Pemigewasset Watershed Resource Co-Occurrence Maps and Analysis - and Bristol-New Hampton Tributaries Watershed Conservation Plan ○ Land Conservation Plan for New Hampshire's Coastal Watersheds (Nature Conservancy, 2006) ○ Piscataquog Watershed Land Conservation Plan (2011 update of	• Manage land use to protect/maintain environmentally-sensitive and/or valuable lands, including: ○ wetlands, riparian, shoreland buffers to protect water quality and maintain habitat ○ terrestrial connectivity between large blocks ○ large, unfragmented forest blocks to support multiple resource and economic functions & increase resiliency ○ limit development in areas of high flooding/erosion risk (flood plains, dam inundation areas, sea inundation, high fluvial erosion risk) ○ areas that support essential natural services (e.g., clean drinking water supply, groundwater recharge, flood control, high-quality habitat, ag soils) (Sources: NH Water Primer, NH Climate Action Plan & Adaptation Planning, NH Wildlife Action Plan, NH Coalition for Sustaining Ag, NRCS Land Evaluation Site Assessment) • Natural resource issues and planning should involve experts, use best-available science and data, and look outside regional boundaries - consider natural frameworks such as watersheds, and look across regional boundaries in evaluating	• Current acres of conservation lands and distribution (geographic, by elevation, use, size): ○ increased from 1.2mil ac 1998 to 1.63 mil in 2010 ○ Uneven distribution toward north and higher elevations (see Forest Resource Assessment 2010; SPNHF Changing Landscapes). ○ % in contiguous parcels > 500 acres ○ by use: ag, forest, etc (e.g., FIA data) • % key resource lands (e.g., natural services network with updated GIS data; % WAP highest ranked by ecological condition (state and region)); conserved versus "in-play" (i.e., undeveloped, not conserved) • Current land cover distribution by type and (e.g., ag, forest, developed) and location (in vs. out of Community Center Area 1/2 mile) • Change in land cover distribution over time (e.g., change in acres developed, or impervious cover - better, per capita) • Trend: increasing conflict between residential and ag uses (source: NH Handbook for Sustainable Ag)	• % new conservation lands include key resource lands (i.e., are conservation efforts & $ being well-targeted?)	• Acres removed from current use NOT subject to land use change tax (i.e., put into conservation) • # towns with Natural Resource Inventory updated within 10 years • Change in acres in ag production • Geographic distribution "(in vs. out of Community Center Area 1/2 mile"; and/or "in vs. out of key resource land areas") of building permits issued, septic permits issued, DES subsurface subdivision approvals issued.	• Change in developed land (better measure = change in impervious cover) per capita • Change in acres of conservation lands and distribution (geographic, by elevation, use, size, etc) • % key resource lands (e.g., natural services network with updated GIS data; highest ranked by ecological condition (state and region)); conserved versus "in-play" (i.e., undeveloped, not conserved)

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	former plan) • Staying Connected in the Northern Appalachians Initiative, The Nature Conservancy (This should be updated after the end of the year as the full 4-state initiative will be on a website.) • USDA Forest Service – Forest Inventory and Analysis, data, summaries, and maps • State level Natural Services Network GIS data layers (GRANIT) - needs to be updated with new Wildlife Action Plan 2010 data, new FEMA floodplain maps, and updated favorable gravel well analysis and well-head protection areas; as well as regional/local Natural Resource Inventories • Conservation Land Data (GRANIT, www.granit.unh.edu) • 305(b)/303(d) Water Quality Impaired Waters Assessments and applicable Water Quality Restoration Plans (TMDLs)	effects on and sustainability of natural resource systems • Evaluate effect of alternative buildout futures on natural resource systems quality and functions. • Promote infill and redevelopment over "greenfield" development as strategy to maintain natural resource functions and quality (Sources: NH Water Primer, NH Climate Action Plan, NHDES Strategic Plan) • Town/regional natural resource inventories should be the basis for land use planning to ensure limited impact to natural resource functions and quality.				
Implementation	• Innovative Land Use Planning Techniques: A Handbook for Sustainable Development (NH DES, 2008) • NH Forest Resource Plan (Forest Action Plan) • Natural Resources Inventories: A Guide for New Hampshire Communities & Conservation Groups • Taking Action for Wildlife (NH F&G and UNH Cooperative Extension, • Preserving Rural Character Through Agriculture (NH Cooperative Extension, 2000 • Good Forestry in the Granite State: Recommended Voluntary Management Practices in NH • Formulating a Water Resources Management & Protection Plan (NH OEP, 1992) • Various regional conservation and environmental management plans (e.g., Lake, Watershed, river management plans) as applicable, including, for	• Look for Integration in Implementation: Consider opportunities for natural resources management, conservation, and protection actions/components, including Hazard Mitigation Planning driven by changing environmental conditions, as part of any/all implementation actions across all chapters/appendices and in working on local Master Plans. • Audit/analyze current zoning & regulations: (1) what natural resource functions and qualities are "threatened" or inhibited by current plans/zoning (e.g., zoning obstacles to ag production - NH Coalition for Sustaining Agriculture); (2) evaluate "what is being missed" by existing policies and regulations re: protection of natural resource functions and quality. • Use comparative ranking tools for resource/land use planning and basis for integrated approach & new/revised zoning ordinances, including (for example): NH Method (wetlands), Forest	• Does existing zoning protect natural resources? Protective of specific natural resource types and functions (e.g., wetlands, steep slopes, habitat, aquifers, ag land, floodplains) • # towns with Natural Resource Inventory within past 10 years • # towns with specific innovative land use zoning ordinances in place (e.g., cons subdiv, low-impact development stormwater management, ag preservation) • USDA Forest Service – Forest Inventory and Analysis, data, summaries, and maps (http://www.fia.fs.fed.us/) •	• # towns with local Agricultural Commissions • % land use change tax toward conservation	• # towns with Natural Resource Inventory within past 10 years and/or applying comparative resource ranking tools • # towns with specific innovative land use zoning ordinances in place (e.g., cons subdiv, low-impact development stormwater management, ag preservation) • # ag land protection zoning districts formed (and acres in) • # forest land protection zoning districts formed (and acres in) • # towns with local Agricultural Commissions • # towns with local land protection programs	• Acres of wetlands lost (filled) • Acres key resource lands lost (i.e., developed) • Change in water quality assessment units impaired for stormwater runoff

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	example: ○ see full resource table for full list of identified plans ○ Lakes Region Conservation Plan (available soon) ○ Land Conservation Plan for New Hampshire's Coastal Watersheds (Nature Conservancy, 2006) ○ Piscataquog Region 2010 Comprehensive Conservation and Management Plan • Creating an Agricultural Commission in your Hometown, NH Coalition for Sustaining Agriculture, 2007 • Conserving the Family Farm: A Guide to Conservation Easements for Farmers, Other Ag Professionals, Landowners and Conservationists, UNH Cooperative Extension, 2002	Land Evaluate Site Assessment (NCRC&D, www.nhrcd.net), Land Evaluation Site Assessment (LESA - NRCS, ag land), natural resource inventories • Maintain/expand state and local statutes, including: LCIP, Current Use, Innovative Land Use controls, % land use change tax toward conservation • Educate public and officials on value contributed by private lands (Source: NH Forest Resource Strategy) • Highlight effective plans and implementation strategies relative to maintaining/improving natural resource functions and quality				
Housing	• Cost of Sprawl Revisited TCRP Report 39 • Handbook on Open Space Development Through Residential Clustering (SNHPC, 2001) • Growing Greener: Putting Conservation into Local Plans and Ordinances (Randall Arendt, Island Press, 1999) • Conservation Design for Subdivision: A Practical Guide to Creating Open Space Networks (Randall Arendt, Island Press, 1996) • Sprawl Indicator Measures - Distribution of Housing Within and Outside Community Center Areas (using Census block data and GIS Community Center Area data layer from UNH GRANIT,	• Support creation of walkable communities (SCORP 2012, forthcoming) • Create, maintain, enhance the connectivity of recreation trails within and between resources and communities. (Source: NH SCORP, 2012 forthcoming) • Support livable, desirable and ecologically healthy communities, minimize storm run-off, absorbing noise, improving quality of life. (Source: NH Forest Resource strategies, NH Div of Forests and Lands, 2010) • Use native lumber and create markets for local housing. Ensure ordinances don't prohibit the use of native lumber. • Utilize Conservation Subdivision design to maintain natural resource connectivity (i.e., connected open space) and protect important resources.	• # local Master Plan Housing chapters that address natural resource functions and quality • # towns with conservation subdiv ord driven by parcel level Natural Resource Inventory • % housing within close proximity (e.g., within 10 min) to outdoor recreation opportunity • Ratio of public open space to housing • Impervious surface per housing unit	•	• # local Master Plan Housing chapters that address natural resource functions and quality • # towns with conservation subdiv ord driven by parcel level NRI	• % housing within close proximity (e.g., within 10 min) to outdoor recreation opportunity • Ratio of public open space to housing • Impervious surface per housing unit • % families spending less than 40% income on housing
Transportation	• Regional Transportation Plans (see all 9 RPC websites – plans are located under publications and reports) • New Hampshire Statewide Bicycle and Pedestrian Plan, NH DOT Bicycle & Pedestrian Program, May, 2000 • Final Supplemental (SEIS) and Reevaluation/Section 4(f) Evaluation – Interstate 93 Improvements Salem to	• Ensure culverts and crossings are designed for higher predicted flows and to maintain aquatic habitat connectivity. (Sources: NH Climate Adaptation Plan, NH Water Resource Primer) • Reduce salt use on transportation system (roads and parking lots) (Sources: NHDOT Solutions for Reducing Salt Use on NH Highways; NH Water Resources Primer)	• # local Master Plan Transportation chapters that address natural resource functions and quality • % roadway culverts sized appropriately per BMPs (Source: NHGS/NHDES has some data) • Road density (lane miles per acre) - and distribution over landscape (and relative to key natural resource lands)	•	• # local Master Plan Transportation chapters that address natural resource functions and quality • 5-yr moving average salt use by DOT • % roadway culverts sized appropriately per BMPs and accounting for climate	• Acres (miles?) of water bodies impaired for chloride • Road density (lane miles per acre) - and distribution over landscape (and relative to key natural resource lands) • % roadway culverts sized appropriately per BMPs and account for climate change

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	Manchester, NH, FHWA-NH-EIS-0201-FS, May 2010 • Vermont Agency of Transportation (VTrans), Wildlife Crossing Initiative, • Management Practices for Routine Roadway Maintenance Activities in NH (NH DOT), • Best Management Practices for Roadside Invasive Plants (NH DOT) • Potential Solutions for Reducing Road Salt in NH, Jeff Taylor and Associates and Center for Environment, Plymouth State College • Staying Connected in the Northern Appalachians Initiative, The Nature Conservancy (This should be updated after the end of the year as the full 4-state initiative will be on a website.) • Timber Bridges in New Hampshire, Southern NH RC&D, 9/2005, and Timber Bridges, Design, Construction and Maintenance, US Forest Service, June 1990, EM7700-8	• Road design and management that ensures aquatic and terrestrial habitat connectivity and minimizes fragmentation. • Facilitate movement of natural resource products. • Help state and communities address deteriorating short span bridge infrastructure with modern timber bridge technology. (US Forest Products Lab)	• Trail miles (by type, e.g., motorized/non-motorized, improved, etc) per capita (and some measure of connectivity of trails - e.g., % trail miles part of trail system > 5 miles) • Sidewalk miles/capita • Bike lane miles/capita • Short span, red listed bridges in need of replacement		change • Trail miles (by type, e.g., motorized/non-motorized, improved, etc) per capita (and some measure of connectivity of trails -e.g., % trail miles part of trail system > 5 miles) • Sidewalk miles/capita • Bike lane miles/capita • Modern timber bridges installed	•

Water Infrastructure	• Water Demand/Consumption Estimates - and associated Stressed-Basin Analysis (with instruction from NHDES/NHGS staff on use)
	• 2010 Flood Impact Survey for Community Water Systems in New Hampshire (Source: NHDES, Water Supply Program)
	• Water Infrastructure Needs Assessment
	• Various community rural fire water resource plans (www.nhrcd.net)
	• Stormwater Management for New Hampshire Communities, SNHPC & NH DES, June 1999, ; NH DES, Stormwater Manuals 1, 2 & 3, r and NH Legislative Stormwater Committee Report Summary, UNH
	• Favorable Gravel Well Analysis and Aquifer Mapping, NH DES and Society for Protection of New Hampshire Forest, June 2010
	• Fluvial-Erosion Hazard Analysis, where available, NH DES Geological Survey
	• Connecticut River Floodplain Analysis
		• Continue/expand improved stormwater management (Sources: NHDES Stormwater Manuals; NH Water Primer; Legislative Commission on Stormwater Report):
		  ○ Address stormwater management on watershed scale (e.g., HUC 12 or larger) and in conjunction with other water management issues (e.g., water withdrawals, flood management)
		  ○ Require stormwater management plans to be in place prior to any public water/sewer system improvement or expansion
		  ○ Implement stormwater utilities
		  ○ Regulate impervious cover
		  ○ Use low-impact development stormwater management to maintain/replicate natural water cycle – location/direction, runoff quantity, infiltration, peak, timing, etc
		• Maintain/expand aquifer mapping and implementation of groundwater/aquifer
			• % aquifers land acres protected (via conservation or protective ordinance)
			• Trend: a significant and increasing number of potential well sites for public drinking water supply CANNOT be used due to encroaching development (source: NH Water Primer)
			• Trend: expanding development downstream of dams in potential inundation areas is resulting in increasing # of high-hazard dams (source: NH Water Primer)
			• Trend: increasing number of severe/extreme storm events, which increases flooding risks and potential for dam failure
			• Trend: Increasing conflict between municipal and private use of groundwater resources (source: USGS Groundwater Sustainability Study)
			• Understand current drinking water % capacity utilized & consumption per capita
			• 83% of impaired waters are due, in part
				• River miles with Fluvial-Erosion Hazard Analysis complete
				• Watershed acres with pollutant loading analysis to identify areas under stress (i.e., threat of declining water quality) and necessary management steps (e.g., regulatory change)
				• Acres with drainage basin modeling completed for identification of areas of potential water demand/supply stress
				• % floodplain protected (using newest floodplain area data that includes climate change affects)
					• # (%) of rural municipal fire water resource plans developed/updated (source: North Country RCD&C)
					• # towns with low-impact development focused stormwater management ordinances (source: OEP, if annual survey can be made more rigorous)
						• % aquifers land acres protected (via conservation or protective ordinance)
						• Drinking water % capacity utilized & consumption per capita
						• % of impaired waters due, in part or in whole, to stormwater runoff pollution (Source: NH Section 305(b)/303(d) Water Quality Assessment)
						• # high-hazard dams (source: NHDES Dam Bureau)
						• % shoreline households on municipal sewer
						• % impaired waters due to stormwater runoff pollution (in whole or in part) (source: NHDES)

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		protection ordinances. • Ensure NH streams and rivers have high water quality, including natural flow characteristics; ensure protection of tributaries not covered under Shoreland Water Quality Protection Act. • Improve dam maintenance and remove unnecessary dams (Source: NH Water Resources Primer) • Water infrastructure planning & upgrades use higher flows and extreme storm events (volume, timing, duration) predicted under climate change scenarios. (Source: NH Water Primer; Climate Adaptation Planning)	or in whole, to stormwater runoff pollution (Source: NH Section 305(b)/303(d) Water Quality Assessment)			
Environment	• Consider **ALL** references under other chapters/appendices also for Environment appendix (and see full list of resources developed by the Natural Resources Functions and Quality Advisory Subcommittee (TASC)). • NH Wildlife Action Plan, including Habitat Landcover and Highest Ranked Habitat, as well as implementation resources (e.g., Taking Action for Wildlife), GRANIT, and • NH Heritage Bureau Data – NH Endangered Species List & Mapping • Natural Resources Inventories: A Guide for New Hampshire Communities & Conservation Groups, UNH Cooperative Extension,; with updated Table 1 found at and applicable regional or municipal NRIs as available at local, regional or state level. • Forest Inventory and Analysis, data, summaries, and maps • Landscapes: Improving Conservation Practices in the Northeast Mega-region • SCORP 2008-2013 (DRED, to be released by Jan. 1, 2013 with supporting Carsey Institute Research Report) • Applicable local and regional management and/or conservation plans, including (for example): ○ A Land Conservation Plan for the Ashuelot River Watershed	• Consider ALL points highlighted under other chapters/appendices for natural resources functions and quality in Environment appendix. • Evaluate the effect of alternative buildout futures on natural resources and systems (such as water quality) • Protect riparian areas and important habitats (e.g., wetlands with high functional values) with sufficient buffers from development and land cover change. (Source: NH Water Resource Primer). • Wildlife and habitat diversity are equal in importance to human based natural resource functions (drinking water). • Recognize value to economy, scenic and recreational value and community character. • Open space prioritization is weighted toward larger connected blocks and not “10 mins to 10 acres” concept. • Require open space/recreation plans as required elements of local master plans. • Contiguous blocks of forest remain intact to enhance economic opportunities….improve landscape, ecological sustainability. (Source: NH Forest Resource strategies, NH Div of Forests and Lands, 2010) • Provide access to outdoor recreation opportunities for all users (e.g., access for	• 83% of impaired waters due, in part or in whole, to stormwater runoff pollution (source: NHDES Section 305(b)/303(d) Water Quality Assessment Report) • Clarity of NH Lakes has declined by 1% per year since 1985 (Source: NHDES Water Quality Program) • Currently have a 2.3% chance of a beach advisory for poor water quality any given day (Source: NHDES Water Quality Program) • Evaluate recreation information (data and trends) from forthcoming SCORP 2012. • Trail miles (by type, e.g., motorized/non-motorized, improved, etc) per capita (and some measure of connectivity of trails - e.g., % trail miles part of trail system > 5 miles)	• Increase in number (%) of municipalities with (a) conservation commission, (b) ag commission, (c) open space commission, (d) forestry commission • Number (%) of municipalities with conservation fund • Average % of current use change tax allocated to conservation fund • Annual game taken data (Source: NH Fish and Game) • Number of hazard mitigation plans that expressly recognize protection of natural resources as mitigation strategy	• # towns conducting wetlands assessment using updated NH Method	• % impaired waters due to stormwater runoff pollution (in whole or in part) (source: NHDES) • % key natural resource lands protected from disturbance (via conservation or regulation/zoning) - e.g., WAP highest-quality habitats, natural service network features (if updated), wetland/riparian buffers) • Maintained or improved water quality trends via NHDES lakes and river assessment data reports. • Lakes Lay Monitoring Program data (Source: UNH Fresh Water Biology Center) • Changes in populations of threatened/ endangered species • Number of endangered and threatened species down or delisted, and number added

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	○ The Land Conservation Plan for New Hampshire's Coastal Watersheds ○ Winnipesaukee Watershed Mgt Plan ○ See additional references under land use chapter and full reference list for Natural Resources Functions and Quality TASC	seniors and disabled, issues relating to fee structures, access close to home/schools/work, parking & connections to public transportation) & connect people with easy access to information on available opportunities. (Source: forthcoming SCORP 2012) • Improve and develop trails, with a focus on connectivity (Source: forthcoming SCORP 2012) • Hazard mitigation planning recognizes value of natural resources as part of mitigation (e.g., floodplains for flood storage, saltmarsh and dunes for storm surge, forested slopes for flood mitigation, etc.) (Source: FEMA and an example)				
Economic Development	• NH Hunger & Food Security materials, UNH Cooperative Extension, (Also - new materials under development by UNH Office of Sustainability) • NH Forest Resource Plan (Forest Action Plan) • Economic Impact of Open Space in New Hampshire, Society for Protection of New Hampshire Forests, Jan 1999, http://www.forestsociety.org/pdf/economic_impact.pdf. Also - Does Open Space Pay, UNH Coop Ext, • Planning for the Future of Local Forests: A Guide for New Hampshire Towns Using the Forestland Evaluation and Site Assessment Process (FLESA) • Report on Economic Value of NH's Surface Waters • SCORP 2008-2013 (DRED, to be released by Jan. 1, 2013 with supporting Carsey Institute Research Report) • National Agricultural Statistics Service (NASS) Statistics, • Cultivating Success on NH Farms: Report of the NH Farm Viability Task Force, 2007	• Increase opportunities for local farms to produce, process, and market foods locally (beyond farmers markets, developing food networks) (Source, NH Coalition for Sustaining Ag, NCRC&D Five Year Plan) • Identify and manage invasive species and pests to maintain functioning ecological systems and protect natural resource based economies • Highlight the economic value of natural resources (e.g., for tourism, livability to attract business, economic benefit of clean surface waters) • Support business climate favorable toward ag and forestry products (Sources: NH Forest Resource Action Plan, 2010; NCRC&D Five Year Plan; NH Coalition for Sustaining Ag) ○ Provide infrastructure for transport, local processing, value-added production, broadband access, and marketing. ○ Remove obstacles such as conflicting local and state ordinances/zoning. ○ Increase markets for ag and forestry products (e.g., all grades and species of wood, minimize exports of raw products) • Protect and support ag and forestry	• Impact of potential decline in surface water quality is upwards of $69 million (Source: Economic Impact of Potential Decline in NH Water Quality, NHDES Lakes Program) • The total sales generated by recreational uses (i.e., boating, fishing, swimming) of New Hampshire's freshwaters, and by public drinking water supplies, range from $1.1 billion to as much as $1.5 billion annually. (Source: NHDES Lakes program) • Forestry products = $1.7 mil/yr; forestry services = $940 mil/yr (Source: Forest Resource Assessment 2010) • Value of Ag products: see Annual Report of Economic Impact of Agriculture and baseline numbers, such as # dairy farms, farmers markets, on-line ag product services, etc (Source: NH Dept of Ag Markets and Food) • Agricultural National Agriculture Statistical Survey data. • % food needs met in-state (Source: UNH Office of Sustainability) • % forestry land owned by industry has declined by 2/3 since 1977 • Trend in acres of Intent to Cut/year (Source: NH Dept of Revenue) • Evaluate recreation economic & tourism information (data and trends) from	• Acres of intent to cut/year (Source: NH Dept of Revenue) • # (volume) and type (purpose) of large water withdrawal permits issued (i.e., water use supports variety of economic activity: ag, industry, snow making, etc; but also presents potential concern) •	• Measures (value) of Ag products & markets: see Annual Report of Economic Impact of Agriculture and changes in numbers, such as # dairy farms, farmers markets, on-line ag product services, etc (Source: NH Dept of Ag Markets and Food) (also ST/LT metric) • Changes in Agricultural National Agriculture Statistical Survey data (e.g., # operating • Measures (value) of Forestry products & markets: e.g., # of value-added forest product manufacturing plants operating; # operating sawmills; board-feet of lumber from sustainable harvested forests (Source: Report on Economic Impact of NH Forests, DRED) (also ST/LT measures)	• Market value of natural resource products (Ag, forestry) • % food needs met in-state (Source: UNH Office of Sustainability) • # acres of working forest conserved • # acres of working forest with management plans in place • Acres in certified tree farms (source: DRED Forest Resource Assessment 2010) • % forested land owned by industry • Acres in "timberland" (i.e., producing >= 20 cu ft/acre/yr) compared to forested land (Source: DRED) • # acres (land & waterbodies) affected by non-native invasive species and pest infestations

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		lands; provide guidance on conservation easement language (e.g., require management plans) to support sustainable use of these lands (Sources: NH Forest Resource Action Plan, 2010; NCRC&D Five Year Plan; NH Coalition for Sustaining Ag) • Provide opportunities for outdoor recreation, and better information on accessing these opportunities, including more access, working with private landowners, developing collaborative partnerships to increase participation by youth, families, disabled, and seniors from all cultures (SCORP 2012, forthcoming).	forthcoming SCORP 2012. • # acres (land & waterbodies) affected by non-native invasive species and pest infestations			
Climate Change Impacts	• Resilient Sites for Terrestrial Conservation for the Northeast and Mid-Atlantic Region • Staying Connected in the Northern Appalachians: Mitigating Fragmentation and Climate Impacts on Wildlife through Functional Habitat Linkages (find new link after Dec 31, 2012) • Assessing Flood Risk in NH Lamprey River Watershed (UNH), • 2010 Flood Impact Survey for Community Water Systems in NH (Source: NHDES Drinking Water Program) • Community Roadmap to Renewable Woody Biomass Energy, A Step by Step Decision Making Tool for NH Communities, North Country RC&D • Ecosystems and Climate Action Plan (forthcoming, 2013, NH Fish and Game) • Coastal Adaptation Workgroup (contact: Steve Miller, GBNERR/NHFG, steve.miller@wildlife.nh.gov) • Resources for Local Energy Committees, The Carbon Coalition, including Vol. I and II, NH Handbook on Energy Efficiency and Climate Change, • SLAMM (salt marsh migration models with sea level rise) Great Bay National Estuarine Research Reserve. (Contact: Rachel Stevens,	• Evaluate changing flooding risks with climate change, as well as different drought and storm events and patterns. • Plan for sea level rise and appropriate adaptation responses for critical public facilities. (e.g., see SLAMM model (Great Bay National Estuarine Reserve), results of Coastal Adaptation Working Group, etc.) • Resource planning and conservation for climate change adaptation that protect ecological systems and community infrastructure and improvements. • Prioritize development of locally available decentralized renewable energy sources. • Insure that human responses to climate change, (i.e. infrastructure) do not negatively impact natural resources.	• Historic and trends for temperature and storm events • See water infrastructure notes - many applicable here too. • New FEMA flood maps • Reduction in emissions of CO_2 through conversion to wood biomass and other renewable.		• # renewable energy production facilities installed (source: PUC) • # public drinking water and waste water facilities implementing changes to adapt to increased flooding risks • acres (#) floodplains protection (flood storage) • # of institutional and community scale biomass thermal heat installations.	• Actions implemented from climate adaptation plans (Source: Energy and Climate Collaborative)

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			Baseline Data: Existing Conditions and Trends	Short Term Planning Process (1-3 Years)	Mid Term Benchmarks (3-5 Years)	Long Term Implementation Effect (5-20 Years)
	rachel.stevens@wildlife.nh.gov)					
Energy Efficiency and Green Building	• Taking the Permaculture Path to Community Resilience • Green Building/Low Impact Development Practices • Regional Greenhouse Gas Initiative (RGGI) • Cooling Our Communities: A Guidebook on Tree Planting and Light-Colored Surfacing 1992 (search for title)	• Develop a "buy local" promotional program to highlight the use of locally produced ag and forest products. (Source: NH Forest Resource strategies, NH Div of Forests and Lands, 2010) • Ensure alternative energy facilities are placed so as to minimize impact to natural resources. • Energy development by design (wind, hydro) with natural resource values and constraints identified to guide energy development.	• Current fossil fuel use per household (Source: ?) • Current stats for biomass fuel produced in NH; landfill methane gas-to-energy production in NH	• # local energy committees in place • Tax credits awarded for energy efficiency improvements (by type: household, business, industry) (Source: PUC?, municipalities?)	• Changes in local building codes to provide greater flexibility for green building • Local adoption of "green" building codes • # LEED certified buildings	• Annual fossil fuel use per household (Source: ?) • # municipal energy and/or adaptation plans developed • Volumes of biomass fuels used (produced?) in NH • Landfill methane gas-to-energy produced

Natural Resource Functions and Qualities TASC:
Research Matrix

NHDES Documents

NHDES either serves or served as the lead agency for these activities or is or was significantly involved. Some state-level planning activities are federally-funded. NHDES staff will support RPC efforts to understand and incorporate information and recommendations from these efforts into the Regional Plans. NHDES support may involve: attending one or two meetings (per topic) with RPC staff; directing RPCs to the most relevant materials; or, reviewing sections of a Regional Plan for consistency. Similarly, NHDES staff will look to the Regional Plans, once prepared, to inform NHDES activities in the future.

NHDES-Related State Planning Activities
(DES contacts can be reached at 271-3503 (main phone) or locate direct phone or email address at http://des.nh.gov/contactus/index.htm)

- **NH Water Resources Primer** - provides current information and numerous recommendations for all aspects of water resource management and protection http://des.nh.gov/organization/divisions/water/dwgb/wrpp/primer.htm (contact: Paul Susca)
- **NH Climate Action Plan** (and implementation being tracked by the NH Energy and Climate Collaborative). http://des.nh.gov/organization/divisions/air/tsb/tps/climate/action_plan/nh_climate_action_plan.htm (contact: Chris Skoglund)
- **NH Climate Change Adaptation Planning** (planning by the coastal communities is being supported by DES). http://des.nh.gov/organization/divisions/water/wmb/coastal/hazards-adaptation.htm (contact: Sherry Godlewski)
- **Local Energy Working Group** -provides strategic coordination for multiple municipal-level energy committees. (contact: Chris Skoglund)
- **Sprawl Indicator Measures** - a collaborative effort led by NHDES to develop new data and define specific measures to assess changing patterns of land use; see Community Centers and Key Destinations data at GRANIT (contact: Carolyn Russell)
- **Water Demand/Consumption Estimates** - developed by USGS for the Stressed-Basins Project and water resource planning , see http://pubs.usgs.gov/of/2009/1168/) (contact: Greg Barker)
- **Stressed-Basins Project** - screening analysis by NHGS comparing water demand versus availability across the entire state. The following website includes links to basin-wide maps that identify areas of moderate or high hydrologic stress: http://des.nh.gov/organization/commissioner/gsu/nhhdp/stressed_basins.htm) (contact: Greg Barker)
- **Favorable Gravel Well Analysis** - identifies areas of stratified-drift aquifers in New Hampshire that may be suitable as new public water supply sources, updated in 2010 http://clca.forestsociety.org/pdf/fgwa.pdf (contact: Pierce Rigrod)
- **Fluvial-Erosion Hazard Analyses -**identifies areas of high risk along certain river corridors http://des.nh.gov/organization/commissioner/gsu/fegh/index.htm (contact: Shane Csiki)

- **Various Watershed, River and Lake Management Plans** - provide watershed specific data, objectives, and management recommendations. Watershed plans available at http://des.nh.gov/organization/divisions/water/wmb/was/watershed_based_plans.htm (contact: Jeff Marcoux); River management plans available at http://des.nh.gov/organization/divisions/water/wmb/rivers/desigriv.htm (contact: Jacquie Colburn); and lake quality reports and related information available at http://des.nh.gov/organization/divisions/water/wmb/lakes/lake_water.htm (contact: Gregg Comstock or Ken Edwardson); source water protection assessments are available at http://des.nh.gov/organization/divisions/water/dwgb/dwspp/reports/part1.htm and example protection plans are available at http://des.nh.gov/organization/divisions/water/dwgb/dwspp/nh_source.htm (contact: Paul Susca)
- **Southeast Watershed Alliance** - a coordinating entity for coastal watershed communities developing recommendations for increased control of nutrient pollution to Great Bay http://www.southeastwatershedalliance.org/ (contact: Steve Couture)
- **Governor's Water Sustainability Commission** - charged with developing a plan to help ensure New Hampshire has a safe, clean and sustainable water supply for the future http://www.nh.gov/water-sustainability/ (contact: Paul Susca)
- **The Sustainability of New Hampshire's Surface Waters.** Report and recommendations developed by NH Rivers Management Committee and NH Lake Management Committee http://des.nh.gov/organization/divisions/water/wmb/rivers/rmac/documents/sustainability_initiative.pdf (contact: Jacquie Colburn)
- **2010 Flood Impact Survey for Community Water Systems in New Hampshire -** defines the range of historic flood-related impacts encountered by community water systems, identifies some potential causes of those impacts, and assesses general costs of damages (contacts: Stephen Roy, Johnna McKenna, Brandon Kernen – DWGB)

NHDES-Related Federal Planning Activities
(These are Federal programs or federally-required activities that are supported by NHDES)

- **305(b)/303(d) Water Quality Assessments** (identifying impaired waters) http://des.nh.gov/organization/divisions/water/wmb/swqa/2012/index.htm (contact: Ken Edwardson)
- **Water Quality Restoration Plans (TMDLs)** (plans to reduce pollutant loading to impaired waters) http://des.nh.gov/organization/divisions/water/wmb/tmdl/categories/publications.htm (contact: Owen David)
- **Water Infrastructure Needs Assessment (2010)** (estimated costs to maintain and improve NH's drinking water, wastewater, and stormwater management infrastructure) For wastewater, see (contact: Sharon Rivard); For drinking water: http://des.nh.gov/organization/divisions/water/dwgb/documents/dw-infrastructure-exec-smry.pdf (contact: Alicia Carlson)
- **Regional Transportation Plans** (DES staff serve on MPO/RPC transportation committees) (contacts: Becky Ohler, Paul Lockwood)

- **NH Coastal Program** (coastal watershed land use planning recommendations, conservation planning) http://des.nh.gov/organization/divisions/water/wmb/coastal/index.htm (contact: Steve Couture)
- **Piscataqua Region Estuaries Partnership (**management plan & recommendations, indicator/measures work)and The Piscataqua Region 2010 Comprehensive Conservation Management Plan. http://prep.unh.edu/resources/pdf/piscataqua_region_2010-prep-10.pdf (contacts: Phil Trowbridge, Coastal Scientist)

Community and Economic Vitality TASC:

Research Matrix

Related Plan Components	Existing Resources	Existing Policies, Principles, Goals, and Questions to be Addressed	Metrics			
			Baseline Data: Existing Conditions and Trends	Short Term Planning Process (1-3 Years)	Mid Term Benchmarks (3-5 Years)	Long Term Implementation Effect (5-20 Years)
Vision	*Identify Existing:* • Various Town Plans have a Vision Section per NH RSA 674:2 I a • Child Care & Sustainable Communities Webinar: American Planning Association • CEDS Documents (NCC, LRPC, SWRPC, SPC, pending in CNHRPC, w/SNHPC) • RPC Regional Master Plans (All RPCs) • State Development Plan per RSA 9-A:1 • Various Data Sources (Employment Projections, Community Profiles, Childcare in NH – ELMI, NH Demographic Trends in the 21st Century by UNH Carsey Institute) • Local success stories (based upon specific region) where community and economic vitality were improved	• Maintain / enhance the (rural) quality of life • Demographic trends information indicates need for diverse population planning, and attracting families with children (NH Demographic Trends in the 21st Century, Carsey Institute) • Develop guiding vision for planning and economic development	• Ongoing regional planning efforts • Current growing population centers • Current population centers w/declining numbers • Want to keep rural character while increasing tax base	• Regional vision statement drawing on local plans • Is the community adapting to demographic changes effectively? i.e. services, access, cultural awareness and infrastructure • Ensure communication and other access accommodations per grants and other requirements are met	• Track demographic change data • Track land use change and assessed property value changes • How many community vision statements reflect regional vision? • How many community vision statements are reflected in the regional plan's vision?	• Reassess regional vision statement • Explore tools to address demographic and population change(s)
Land Use	• Master Plans (Various, per each town) • Zoning Ordinances (including Innovative Land Use Guidebook model ordinances) (Various, per each town) • NH Livable Walkable Communities Toolkit • HEAL NH Action Plan 2008 & Strategic Plan 2011 • NH Everlasting – NH Forest Society • Innovative Land Use Guidebook • NH Statewide Comprehensive Outdoor Recreation Plan (SCORP 2013 – 2018)	• MPs seek to protect community character, balance budgets and ensure adequate delivery of services • Zoning implements MPs • ILUG provides various model ordinances • Where are regional Growth Centers? • To what extent are working lands addressed?	• NH's population is growing less: it grew 6.9% between 2000 and 2010; 11.4% between 1990 & 2000; 20.5% between 1980 & 1990 (US Census) • 19 NH Towns do not have zoning (NHOEP) • NH Obesity Data Book 2010 • DHHS Municipal Survey, 2011 • 2011 New Hampshire State Health Profile	• Draft policies that are responsive to population/growth/economic changes • Incorporate appropriate smart growth and NH livability principles into the land use section • Assess whether or not land use and vision statements are aligned	• Monitor/track data on population/growth/economic changes	• Reassess effectiveness/initial policies and change as needed. • Assess whether or not land use and vision statements are aligned

Related Plan Components	Existing Resources	Existing Policies, Principles, Goals, and Questions to be Addressed	Metrics			
			Baseline Data: Existing Conditions and Trends	Short Term Planning Process (1-3 Years)	Mid Term Benchmarks (3-5 Years)	Long Term Implementation Effect (5-20 Years)
Implementation	• Mapping projects showing current location of services and housing, transportation, cc, zoning/land use, business/employment (Various, per each town) • Town CIPs (Various, per each town) • Last State of New Hampshire Capital Improvement Plan	• What is the capacity (meaning staffing, clear process, on-the-ground conditions, etc.) to develop and/or redevelop property? • Is the local permitting process clear, predictable and fair?	• Use baseline data found elsewhere in this document or revisit cited sources to use most current data available	• Municipalities & stakeholders should review regulatory framework to ensure that it accomplishes the communities' articulated vision(s) • Establish a public/private dialogue regarding the permitting process • Ensure permitting processes are transparent, predictable and fair	• Monitor/track data on population/growth/economic changes • Identify and implement mid-term course adjustments, as needed	• Reassess effectiveness/initial policies and change as needed.
Housing	• Regional Housing Needs Assessment Study (RHNA) (various, per towns and planning commissions) • Regional Workforce Housing Fair Share Analyses (various, per towns and planning commissions) • NH Health & Equity Plan • Housing and Family-Friendly Communities: Cornell University/APA • New Hampshire Housing Finance Authority Research Library & Housing Data • McKinney-Vento Act	• RHNAs identify housing needs in a given region • WFHFSAs specifically look at the workforce housing needs in a region • Workforce Housing RSA • What is the capacity (zoning, political will, etc.) for mixed-use housing? • Mitigate homelessness	• NH's population is growing less: it grew 6.9% between 2000 and 2010; 11.4% between 1990 & 2000; 20.5% between 1980 & 1990 (US Census) • NH's population is getting older • Most towns in the state saw a decline in school-aged children (US Census) • Residential building permits increased by 2.2% to 7,702 between 2000 and 2005, then decreased by 72% between 2005 & 2009 (NHOEP) • Identify homeless statistic data source	• Develop policies that encourage a mix of housing choices and options • Develop a regional housing needs assessment & a regional workforce housing needs assessment	• Monitor residential building permit activity (age restrictive, multi-family, workforce housing and market rate units) • Evaluate age distribution • Monitor home ownership statistics • Work with the state on innovative solutions for small scale waste system applications • Monitor housing unit vacancy rates	• Reassess effectiveness/initial policies and change as needed.
Transportation	• State Plans (TIP, STIP, 10-Year) • Regional Corridor Studies (various, per each RPC) • NH Livable Walkable Communities Toolkit • Transportation & Family-Friendly Communities: Cornell University/APA • Transit Provider Plans (various, per each organization) • NHDOT Complete Streets (at bottom of page) • NHDOT Park and ride maps • NHDOT Bike-Ped Program	• State Plans (TIP, STIP & 10-Year) plan identify transportation infrastructure needs • SRTS plans indicate pedestrian infrastructure needs around schools • The various corridor studies identify infrastructure and safety needs • To what extent is multi-modal transportation possible?	• Less money at both the state and local level for transportation infrastructure • RPC Traffic Counts • Census On-the-Map Tool	• Advocate for adequate transportation funding • Encourage the development of multi-modal opportunities • Ensure consistence with appropriate Smart Growth and NH livability principles • Promote & encourage complete streets • Consider impacts of all modes of transportation • Encourage telecommuting and flexible work schedules • Encourage development of telecommunications infrastructure to facilitate telecommuting	• Assess commuter statistical data from US Census • Continue regional traffic count data collection process • Track demographic changes (population, income, age, etc.) • Track changes in housing and land use development patterns	• Encourage the linkage of commuter rail and multi-modal transportation hubs/options • Strive for a balance transportation system
Water Infrastructure	• Central NH Public Water System Emergency Interconnection Study (available at CNHRPC offices – not online) • Aquifer Protection BMPs	• Does opportunity exist for regional interconnection of water infrastructure? • Protect aquifer resource	• Less money at both the state and local level for water infrastructure (NH Center for Public Policy Studies)	• Where practicable and feasible, encourage the development of municipal water systems, both locally and/or regionally. Consider	• Monitor/track data on population/growth/economic changes	• Reassess effectiveness/initial policies and change as needed.

Related Plan Components	Existing Resources	Existing Policies, Principles, Goals, and Questions to be Addressed	Metrics			
			Baseline Data: Existing Conditions and Trends	Short Term Planning Process (1-3 Years)	Mid Term Benchmarks (3-5 Years)	Long Term Implementation Effect (5-20 Years)
	• Water Sustainability Commission Plan • What's Our Water Worth? • Governor's Water Sustainability Commission			impacts on supply and land use (i.e. density) factors		
Environment	• Local River Advisory committee Management and Implementation Plan(s) – various per each LRAC; see UMRLAC as an EXAMPLE • Wildlife Action Plan • Brownfield Funds • Plan to Address Health Disparities and Promote Health Equity in NH • Expanding Lifestyle Amenities for Families: Parks and Recreation, Cornell University/APA • CMAQ • What's Our Water Worth?	• Are Best Management Practices used? • Are recreation opportunities protected? • Is there balance between economic and environmental needs? • To what extent can the creative economy be capitalized on?	• 34 NH Communities have post-construction stormwater management regulations in place (NHOEP) • About 1,383 petroleum brownfields exist in 2012 and about 362 hazardous substance brownfields sites (NHDES) • Geo-mapping	• Integrate current BMPs in regulatory framework(s) • Educate public and stakeholders about current BMPs • Encourage green infrastructure • Encourage to conduct occasional regulatory audits to determine if environmental regulations are adequate and appropriate	• Monitor/track data on population/growth/economic changes	• Reassess effectiveness/initial policies and change as needed.
Economic Development	• Local/Regional Economic Development Plans (CEDS, Town Economic Development Plans/Economic Chapter of Master Plans) • State Business Assistance programs (DRED, CDFA, Brownfield Funds) • Documents regarding emerging markets/Opportunities (NH Energy, Environmental and Economic Development Benchmark Report, Emerging Green Construction in New Hampshire, Green Manufacturing in New Hampshire) • Various Data Sources (Employment Projections, Community Profiles, Childcare in NH – ELMI, NH Demographic Trends in the 21st Century by UNH Carsey Institute) • Workforce Training and Education Programs • Guide to Creating a Community Arts and Cultural Plan; and, Creative Economy Tool Kit (NH Creative Communities Network) • What's Our Water Worth? • Arts & Economic Prosperity IV Survey • From Tailwind to Headwind: NH's Shifting Economic Trends • Cornell Child Care Studies: Cultivating Connections Between Economic	• What is the current economic situation (regional clusters & local businesses)? • What is the current economic vision articulated in existing plans (CEDS, local econ plans, etc.)? • What infrastructure is needed (hard/soft/financial)? • What opportunities exist for economic growth in a global economy vis-à-vis increasing the number of quality jobs in new businesses/sectors? • What can be done to retain or strengthen the standing of current employers and economic sectors? • Is there enough child care regionally? • Is the regional child care affordable? • Can New Hampshire develop a livable wage?	• Local spending has grown in some towns and slowed in others, state spending is down resulting in an increase in property taxes as costs are "downshifted" to local governments (NH Center for Public Policy Studies) • Median Household Incomes are up: 27% between 2000 & 2005 to $68,000 and by 15% from 2005 to 2010 to $78,000 (US Census) • Unemployment increased then decreased over the past decade: 2.7% in 2000 to 6.2% in 2010, then down to 5.4% in 2011 (US Census) • Residential building permits increased by 2.2% to 7,702 between 2000 and 2005, then decreased by 72% between 2005 and 2009 (NH Labor Market Information Bureau) • The State projects a 10.4% increase in employment between 2010 and 2020; a 6.1% increase in goods-producing employment and an 11.7% increase in the service industry (NH Labor Market Information Bureau) • Identify source for minimum wage/living wage and poverty link.	• Encourage participation in regional CEDS plan development • Encourage the development of local economic development plans • Encourage the development of hard and soft infrastructure to facilitate economic development • Encourage entrepreneurship and the development of new industries with livable wages • Encourage planning for economic emergency management, planning and recovery planning for disasters • Encourage adequate financial infrastructure for economic development • Encourage the recruitment and retention of young people to grow and diversify the workforce • Develop a statewide economic development strategy document • Be aware of various economic trends and needs; be responsive to changes • Encourage the development of	• Evaluate development and redevelopment potential • Evaluate economic indicators and data such as: commercial vacancy rates, median income, assessed value of commercial properties, unemployment rates, etc. • Ensure that local and state regulatory process is conducive to redevelopment • Evaluate and track demographic data • Assess long-term unemployment and under employment.	• Reassess effectiveness/initial policies and change as needed.

Related Plan Components	Existing Resources	Existing Policies, Principles, Goals, and Questions to be Addressed	Metrics			
			Baseline Data: Existing Conditions and Trends	Short Term Planning Process (1-3 Years)	Mid Term Benchmarks (3-5 Years)	Long Term Implementation Effect (5-20 Years)
	Development & Child Care and Linking Economic Development & Childcare Research • Child Care & Sustainable Communities Webinar: American Planning Association • NH Economic Outlook • Carsey Institute: Minimum Wage and Poverty in America • MIT Living Wage Calculator			affordable and adequate child care • Show school aged children a variety of employment opportunities, including manufacturing • Establish baseline for minimum wage/living wage link to poverty; develop policies to establish a livable wage		
Climate Change Impacts	• NH Climate Action Plan • UNH Institute on Earth, Oceans and Space (Dr. Cameron Wake)	• NHCAP identifies problems, opportunities, needs and recommendations for dealing with the reduction of greenhouse gasses & slowing climate change. • Energy conservation; reduce GHE.	• Historical Emissions were 15.79 MMTCO2e/yr in 1990 and 22.45 by 2005. Numbers could be higher than 40 in 2050 (NHDES)	• Encourage the reduction of carbon footprints through: reuse, multi-modal transportation, compact development, green retrofitting, green building and infrastructure, etc. • Encourage the development of green jobs • Focus conversations regarding climate change around specific courses of actions and BMPs	• Monitor/track data on population/growth/economic changes	• Reassess effectiveness/initial policies and change as needed.
Energy Efficiency and Green Building	• NH State Building Code • NH Energy, Environmental and Economic Development Benchmark Report • Emerging Green Construction in New Hampshire • Green Manufacturing in New Hampshire • NH Better Buildings Program http://www.betterbuildingsnh.com/ • PSNH Energy Efficiency Information	• NH State Building Code provides standards for building construction in the state. • EEED Benchmark Report establishes benchmarks for where NH is at with regard to climate change • REGGI • PUC	• Energy expenditures have increased from 2005 to 2009 (NHDES) • Household energy expenditures and energy building codes have remained about the same (NHDES) • Spending per capita on transportation energy has gotten worse (NHDES)	• Encourage energy conservation • Encourage the use of green building BMPs • Encourage alternative energy development • Encourage reuse and redevelopment of properties, including brownfields • Encourage the growth of the “green” economy locally • Explore all benefits of energy efficiency and green building	• Monitor/track data on population/growth/economic changes	• Reassess effectiveness/initial policies and change as needed.

Climate Change and Energy Efficiency TASC:

Research Matrix

Related Plan Components	Existing Resources	Existing Policies, Principles, Goals, and Questions to be Addressed	Metrics: Baseline Data: Existing Conditions and Trends	Metrics: Short Term Planning Process (1-3 Years)	Metrics: Mid Term Benchmarks (3-5 Years)	Metrics: Long Term Implementation Effect (5-20 Years)
Vision	NH's Five-Year Preservation Plan NH Climate Action Plan EESE Board Final Report on the VEIC Independent Energy Study	• Develop and adopt a comprehensive and stable state energy policy that supports energy security, human health, environmental protection, and in-state economic development (Climate Change & Energy TASC members). • Develop a comprehensive outreach and education policy based on the state energy policy (Climate Change & Energy TASC members). • Incorporate considerations of climate change and energy efficiency into municipal government functions, regulations, and planning processes (Climate Change & Energy TASC members). • Implement programs and assistance to encourage consideration of climate change and energy efficiency among private businesses and individuals (Climate Change & Energy TASC members).	n/a	n/a	N/a	n/a
Land Use	TOP 5 RESOURCES: Northeast Climate Impact Assessment Office of Energy & Planning Cost of Sprawl tool Climate Action Plan Economic Impact of Local Food Systems in NH US Dept. of Agriculture Climate Change Science Plan (2010) ADDITIONAL RESOURCES: updated FEMA maps GRANIT website NH's Changing Landscape	Innovative Land Use Planning Guide: the guide is comprised of model standards that can be incorporated within municipal zoning, land use regulations, hazard mitigation plans, capital improvement plans and land/resource preservation plans to achieve specific goals relating to: 1) climate change (adaptation strategies and plans, regulated growth and development in high hazard areas and floodplains, building codes, shoreland easements and setbacks, buffers to sensitive areas, targeted preservation of land, resources and ecosystem services, infrastructure maintenance and replacement standards); and 2) energy (conservation and efficiency, reduction in greenhouse gas emissions, reduced vehicle miles travelled, development and implementation of alternative and renewable energy sources). RSA 674:63 Small Wind Energy Systems: In 2008 the NH Legislature passed HB310, which creates a framework for municipalities to regulate the construction of small-scale	New England Climate Assessment Forests (Chapter5): • Figure 5.2, Forest land area in region 1600-1997. • Figure5.3, Carbon storage in Northeastern forest ecosystem components. • Table5.2, Total carbon accumulation in trees each state. • Increased Carbon storage may be one response by regional forests to increased CO2 in the atmosphere. However, uncertainties about continuing air pollution effects, soil nutrient depletion, insect pests, and disease raise questions about this response. A win-win scenario may be possible if reduced Co2 emissions are accompanied by reduction in air pollution levels, resulting in improved forest health and increased forest productivity. Winter Recreation: • (From Executive Summary, p.iii) A more	Annual acres of green space developed. Annual acres of land conserved. Number of farmers markets. Average number of farmers per market. Number of CSAs (community supported agriculture).	Annual acres of green space developed. Annual acres of land conserved. Change in impervious surface and land cover (GIS layer). Number of farmers markets. Average number of farmers per market. Number of CSAs (community supported agriculture).	Annual acres of green space developed. Annual acres of land conserved. Change in impervious surface and land cover (GIS layer). Number of farmers markets. Average number of farmers per market. Number of CSAs (community supported agriculture).

Related Plan Components	Existing Resources	Existing Policies, Principles, Goals, and Questions to be Addressed	Metrics			
			Baseline Data: Existing Conditions and Trends	Short Term Planning Process (1-3 Years)	Mid Term Benchmarks (3-5 Years)	Long Term Implementation Effect (5-20 Years)
		wind turbines. The law clarifies the obligation municipalities have to encourage renewable energy in a manner that protects public health, safety, and welfare. The Small Wind ordinance is flexible enough for municipalities to adjust the regulations and meet their individual goals. Additional information available from NH OEP. Energy Efficient Development Ordinance: this ordinance provides model language for three approaches that communities may adopt depending on their availability of building inspection and code enforcement staff. These approaches include language for adoption into subdivision or site plan review regulations, the adoption of additional building codes that exceed state energy codes, and the adoption of a performance zoning ordinance encouraging voluntary implementation of energy efficient practices for new construction in exchange for incentives or bonuses. This ordinance was developed as part of the NH Dept. of Environmental Service's Innovative Land Use Planning Techniques Handbook. RSA 72:61-72 permits municipalities to offer Property Tax exemptions on solar, wind, and wood heating systems, including solar hot water, solar photovoltaic, wind turbines, and central wood heating systems (not stovetop or woodstoves). Communities may choose to pass each exemption separately. RSA 674:2 permits municipalities to include energy chapters in their master plans, which consist of an analysis of energy and fuel resources, needs, scarcities, costs, and problems affecting the municipality and a statement of policy on the conservation of energy. RSA 9-B: State Economic Growth, Resource Protection, and Planning Policy: "Smart Growth" statute, establishing key principles for economic growth, resource protection, and planning that ensure "… clean water and air; productive mountain, forest, and	thorough economic analysis, focusing on all sectors … is needed. The limited economic assessment conducted for the NERA had a narrow focus on only a few segments of the Forest, Tourism, and Human Health Sectors.			

Related Plan Components	Existing Resources	Existing Policies, Principles, Goals, and Questions to be Addressed	Metrics			
			Baseline Data: Existing Conditions and Trends	Short Term Planning Process (1-3 Years)	Mid Term Benchmarks (3-5 Years)	Long Term Implementation Effect (5-20 Years)
		agricultural open space land," and that impact directly land use development and transportation patterns that greatly affect energy use. RSA 672:1 III-a and III-d: Planning and Zoning Act stating that renewable energy systems shall not be unreasonably limited by municipal zoning, or the unreasonable interpretation of zoning regulation. Energy Commissions Statute (RSA 38-D: Energy Commissions, 2009) enables the appointment of an energy commission by either the local legislative or the local governing body of 3-10 members with staggered three year terms. The purpose of an energy commission is "…for the study, planning, and utilization of energy resources for municipal buildings and built resources of such city or town", to research municipal energy use, and recommend to local boards pertaining to municipal energy plans and sustainable practices, such as energy conservation, energy efficiency, energy generation, and zoning practices.				
Implementation	TOP 5 RESOURCES: • NH Climate Collaborative • Coastal Adaptation Work Group • Upper Valley Adaptation Work Group • Regional Energy Groups & Local Commissions/Committees • Community College & University Systems programs looking at energy efficiency training: ex. Lakes Region Community College Energy Efficiency Training Program, UNH Sustainability Institute ADDITIONAL RESOURCES: • Municipal Master Plans, Hazard Mitigation Plans, and Capital Improvement Plans • Energy Technical Assistance and Planning municipal energy use data (not currently available but will eventually be provided by OEP) • EPA Community Energy Challenge	Municipalities and schools should track and publish annual energy use (ex. Bethlehem Annual Report) *(Climate Change & Energy TASC members)*. Make Energy Technical Assistance and Planning (ETAP) municipal baseline energy data available to municipalities and planners *(Climate Change & Energy TASC members)*. Update job descriptions for municipal employees to include energy tracking as a required task *(Climate Change & Energy TASC members).*		Tracking of energy use data in all public buildings, infrastructure, and vehicles	Tracking of energy use data in all public buildings, infrastructure, and vehicles	Tracking of energy use data in all public buildings, infrastructure, and vehicles

Related Plan Components	Existing Resources	Existing Policies, Principles, Goals, and Questions to be Addressed	Metrics			
			Baseline Data: Existing Conditions and Trends	Short Term Planning Process (1-3 Years)	Mid Term Benchmarks (3-5 Years)	Long Term Implementation Effect (5-20 Years)

Housing	NH Building Energy Code Compliance Roadmap Report
	
	CDFA Neighborhood Stabilization Program
		Achieve 90% compliance with existing NH building energy codes *(Climate Change & Energy TASC members)*.
		
		Municipalities should participate in National Flood Insurance Program *(Climate Change & Energy TASC members)*.
		
		NH Building Energy Code Compliance Roadmap Report—goal to achieve at least 90% compliance with the state energy code by 2017 *(Executive Summary, pg 1)*.
		
		NH Building Energy Code Compliance Roadmap Report—overcoming market barriers to energy code compliance will be critical to achieving intermediate outcomes on the path to reaching at least 90% compliance with the state energy code by the year 2017. The key building blocks for achieving 90% compliance with the NH energy code are:
		• Strong leadership and policies
		• Stakeholder engagement
		• Targeted outreach and education
		• Adequate resources and funding
		• Verification and enforcement
		• Measurement and evaluation (Executive Summary, pg 6).
		
		US Dept. of Energy—the single most important step to reducing energy use in buildings is to implement and enforce compliance with building energy codes (*U.S. Department of Energy, Building Energy Codes Program 2011 Annual Report "Development, Adoption, Compliance – Building Greater Energy Efficiency", page 9).*
			U.S. Census Bureau, 2011 American Community Survey
			New Hampshire House Heating Fuel:
			• Total Houses: 516,454
			  ○ Utility gas: 100,958
			  ○ Bottled, tank, LP gas: 74,416
			  ○ Electricity: 40,613
			  ○ Fuel oil, kerosene, etc.:252,159
			  ○ Coal or coke: 910
			  ○ Wood: 37,084
			  ○ Solar energy:280
			  ○ Other fuel:7,019
			  ○ No fuel used: 3,015
			
			Preservation Green Lab (National Trust for Historic Preservation)—Preservation Green Lab seeks to minimize carbon impacts from the built environment through direct emissions reductions from building retrofits and reuse.
			• Existing building use 40% of the energy in the U.S. and 68% of the electricity.
			• It can take 10-80 years for a new energy efficient building to overcome, through efficient operations, the climate change impacts created by its construction.
			• The range of savings from building reuse is between 4-44% less than the environmental impacts of new construction.
			
			NH OEP—the number of housing permits issued in NH has declined each year from 2003 to 2008. A similar trend can also be seen at the county level, however, the year that permits peak ranges from 2002-2004.
			
			NH OEP Weatherization Program—number of homes weatherized by county and number of requests made statewide, years 2004-2007.
				Municipal participation in National Flood Insurance Program
				
				Education on energy efficiency, renewable energy, and building codes for municipal inspectors, builders, architects.
				
				Number of home starts.
					Education on energy efficiency, renewable energy, and building codes for municipal inspectors, builders, architects.
					
					Number of home starts.
					
					Number of Energy Star homes.
					
					Number of net zero energy homes.
						Education on energy efficiency, renewable energy, and building codes for municipal inspectors, builders, architects.
						
						Number of home starts.
						
						Number of Energy Star homes.
						
						Number of net zero energy homes.

Transportation	• Assessing Vulnerability and Risk of Climate Change Effects on Transportation Infrastructure: Pilot of the Conceptual • US Department of Transportation, Transportation and Climate Change Clearinghouse website • MPO/RPC Air Quality Attainment	NH Climate Action Plan recommends that NH reduce VMTs through planning measures that encourage more compact and transit oriented development and by expanding transit opportunities, where appropriate, to reduce the demand for single occupancy vehicles.		Annual Vehicle Miles Traveled (VMTs) Fuel consumption Percentage of state served by transit.	Annual Vehicle Miles Traveled (VMTs) Fuel consumption Percentage of state served by transit.	Annual Vehicle Miles Traveled (VMTs) Fuel consumption Percentage of state served by transit.

Related Plan Components	Existing Resources	Existing Policies, Principles, Goals, and Questions to be Addressed	Metrics			
			Baseline Data: Existing Conditions and Trends	Short Term Planning Process (1-3 Years)	Mid Term Benchmarks (3-5 Years)	Long Term Implementation Effect (5-20 Years)
	reports • Economic and Greenhouse Gas Impacts of the New 2009 Fuel Economy (CAFE) Standards in New England • NH Climate Action Plan			Number of VMTs reduced as a result of transit.	Number of VMTs reduced as a result of transit.	Number of VMTs reduced as a result of transit.

Water Infrastructure	TOP 5 RESOURCES:
	• Ready or Not: An Evaluation of State Climate and Water Preparedness Planning
	• NH DES Water Resources Primer
	• Drinking Water State Revolving Fund
	• NH Governor Commissions:
	  ○ NH Water Sustainability Commission
	  ○ Stormwater Commission
	• Atlas of Precipitation Extremes for the Northeastern United States and Southeastern Canada
	
	ADDITIONAL RESOURCES:
	• NH GRANIT website
	• Comprehensive Flood Management Study Commission (DES, 2008)
		Federal Safe Drinking Water Act (SDWA) is the main federal law that ensures the quality of Americans' drinking water. Under SDWA, EPA sets standards for drinking water quality and oversees the states, localities, and water suppliers who implement those standards. SDWA was originally passed by Congress in 1974 to protect public health by regulating the nation's public drinking water supply. The law was amended in 1986 and 1996 and requires many actions to protect drinking water and its sources: rivers, lakes, reservoirs, springs, and ground water wells. SDWA does not regulate private wells which serve fewer than 25 individuals.		Facility energy consumption.	Facility energy consumption.
					
					Number of facilities with energy plans.
					
					Number of facilities with Climate Preparedness Plans.
						Facility energy consumption.
						
						Number of facilities with energy plans.
						
						Number of facilities with Climate Preparedness Plans being implemented.

Environment	Northeast Climate Impacts Assessment Department of Interior, Climate Change Response website	Wildlife Action Plan—the most challenging issues facing alpine habitat are climate change and acid deposition *(chapter 3, pg 14)*. The most challenging issues facing dune habitat are recreational activities, oil spills, and rising sea level resulting from climate change. Dunes are one of the most at-risk habitats in NH *(chapter 3, pg 19)*. Wildlife Action Plan—even the best-protected wildlife populations and habitats are increasingly threatened by climate change. The overarching goal is to reduce harmful air and water pollutants by promoting sustainable energy, transportation, and industrial development practices. • Promote the adoption of structured risk assessments by state and federal agencies engaged in energy, transportation, and industrial development projects. Assessments include a goal, identification of risks, risk monitoring, and mitigation for unavoidable impacts. • Promote the use of regional and national air and water quality policies and funding	State of the Environment *(NH DES, currently in progress)* State of the Estuaries *(currently in progress, will be published by Dec. 7, 2012)*	Number of hazard mitigation plans and master plans that mention climate change.	Number of hazard mitigation plans and master plans that include steps to address climate change.	Number of hazard mitigation plans and master plans that include steps to address climate change. Number of annual reports that include report on adaptation/preparedness planning.

Related Plan Components	Existing Resources	Existing Policies, Principles, Goals, and Questions to be Addressed	Metrics			
			Baseline Data: Existing Conditions and Trends	Short Term Planning Process (1-3 Years)	Mid Term Benchmarks (3-5 Years)	Long Term Implementation Effect (5-20 Years)
		in New Hampshire. • Advise the coordinators of regional conservation initiatives on air and water quality issues in New Hampshire that need to be addressed at the regional or national level (chapter 5, pg 3). 2005 White Mountain National Forest Land and Resource Management Plan—the role of the White Mountain National Forest is expressed through goals that align with the legal context and social and economic setting of the forest. The plan has 21 goals (and approx. 70 objectives), including: • Forest Plan goals designed to sustain a healthy forest, • Air Quality goals that insure that forest management activities are conducted in a manner that meets NAAQS and the SIP, • Non-native Invasive Species goals that will keep the Forest as free of non-native invasive species as reasonably possible, • Recreation goals that will provide a range of quality recreation activities and opportunities, and, • A number of other goals.				
Economic Development	• NH Green Launching Pad • NH Climate Action Plan • Northeast Climate Impact Assessment (winter recreation) • New Hampshire Department of Resources and Economic Development: Recommendations on Best Practices and Energy Program Initiatives	RSA 79E—enabling legislation to provide tax breaks to municipalities to rehab historic building or tear down existing non-historic building and rebuild. Remove barriers to alternative financing, including education to municipalities about power lease agreements and their legality *(Climate Change & Energy TASC members)*.				
Climate Change Impacts	TOP 5 RESOURCES: Northeast Climate Impact Assessment NH Climate Action Plan Climate Change in the Casco Bay Watershed Intergovernmental Panel on Climate Change (Executive Summary) • Chapter 3 Changes in Climate Extremes and their Impacts on the Natural Physical Environment • Chapter 4 Changes in Impacts of Climate Extremes: Human Systems and	NH Climate Action Plan—NH should strive to achieve a long-term reduction in greenhouse gas emissions of 80% below 1990 levels by 2050 *(Executive Summary, pg 1)*. NH Climate Action Plan—NH should strive to achieve a mid-term reduction in greenhouse gas emissions of 20% below 1990 levels by 2025 *(Executive Summary, pg 2)*. NH Climate Action Plan—in order to reach the long term goal and provide the greatest economic opportunity to NH, the Task Force identified 10 overarching strategies:	Ready or Not: An Evaluation of State Climate and Water Preparedness Planning (NRDC, April 2012) • NH is ranked in Category 2 with respect to climate preparedness planning by NRDC (adaptation activities under way in some state agencies but not guided by an overarching strategy or plan). • Winter temperatures expected to be 4 – 7 degrees higher than historic average by 2050. • Summer temperatures expected to be 2-8 degrees higher by 2050. • 30-50% reduction in snow season by	Number of hazard mitigation plans and master plans that mention climate change.	Number of hazard mitigation plans and master plans that include steps to address climate change.	Number of hazard mitigation plans and master plans that include steps to address climate change. Number of annual reports that include report on adaptation/preparedness planning.

Related Plan Components	Existing Resources	Existing Policies, Principles, Goals, and Questions to be Addressed	Metrics			
			Baseline Data: Existing Conditions and Trends	Short Term Planning Process (1-3 Years)	Mid Term Benchmarks (3-5 Years)	Long Term Implementation Effect (5-20 Years)
	Ecosystems • Chapter 5 Managing the Risks from Climate Extremes at the Local Level ADDITIONAL RESOURCES: US EPA Climate Change Impacts and Adapting to Change NH Floodplain Management Program	1. Maximize energy efficiency in buildings 2. Increase renewable and low-CO2 emitting sources of energy in a long-term sustainable manner. 3. Support regional and national actions to reduce greenhouse gas emissions. 4. Reduce vehicle-miles traveled through state actions. 5. Encourage appropriate land use patterns that enable fewer vehicle-miles traveled. 6. Reduce vehicle-miles traveled through an integrated multi-modal transportation system. 7. Protect natural resources (land, water, wildlife) to maintain the amount of carbon fixed or sequestered. 8. Lead by example in government operations. 9. Plan for how to address existing and potential climate change impacts. 10. Develop an integrated education, outreach, and work-force training program (chapter 2, pg 19-20). NH State Hazard Mitigation Plan—the overall goals of the State, with respect to Hazard Mitigation, are to provide guidance in the selection of hazard mitigation activities throughout the state. • Goal 7. To address the challenges posed by climate change as they pertain to increasing risks in the State's infrastructure and natural environment (VII-2). • Objective A. Support efforts to characterize and identify risks posed by climate change especially as it relates to changing precipitation patterns, storm event frequency, and sea level rise (VII-19). • Objective B. Support strategies for adaptation to climate change (VII-20). • Objective C. Encourage coastal communities to incorporate mitigation planning in master plans, zoning, land use and resource regulation, and other planning studies and initiatives that address the existing and potential future threats related to climate change and sea	2050. Indicators of Climate Change in the Northeast: see graphic on page 28 for data on average northeast temperature change, participation change, sea surface temperature change, relative sea level rise, days with snow on the ground, ice-out of lakes, and growing season days. NH Energy and Climate Collaborative Benchmark Report • The NH Energy and Climate Collaborative was established to monitor progress and facilitate efforts to implement the goals set forth in the NH Climate Action Plan of 2009. • The Collaborative released the NH Energy, Environmental and Economic Development Benchmark Report in June 2012. • The Benchmark Report was developed to evaluate baseline conditions and trends regarding the broad energy, environmental and economic development goals recommended in the Climate Action Plan. • The Benchmark Report examines trends over a five year period 2005-2009 in 24 specific indicators and 6 broad categories. • Key findings of current Benchmark Report for 2005-2009: ○ 16 of 24 indicators (67%) showed positive trends, 6 (25%) showed no change and 2 (8%) showed negative trends. • In future years the Collaborative plans to produce a Report Card to track progress on the goals of the Climate Action Plan.			

Related Plan Components	Existing Resources	Existing Policies, Principles, Goals, and Questions to be Addressed	Metrics			
			Baseline Data: Existing Conditions and Trends	Short Term Planning Process (1-3 Years)	Mid Term Benchmarks (3-5 Years)	Long Term Implementation Effect (5-20 Years)
		level rise (VII-20). CRE Coast Study in Hampton-Seabrook Estuary - The CRE-COAST (Climate Ready Estuaries-Coastal Adaptation to Sea Level Rise Tool) project area included the towns of Hampton, Hampton Falls and Seabrook and focused on modeling protection of critical municipal facilities with structural berms under future projected scenarios for sea level rise and storm surge. The COAST model shows, where the adaptation actions are implemented, benefits in the form of avoided damages outweigh adaptation costs. Investing in adaptation would thus be likely to provide a high rate of return. Even without sea level rise (SLR), the selected adaptation would provide benefits in the form of avoided storm surge (SS) damages. The models developed for this project are useful for weighing opportunities and making decisions concerning land use in coastal flood plains. The models are not designed, however, to predict the future developed landscape or to estimate engineering or other costs with great degrees of certainty. They are intended to foster engaged dialogue about a wide range of adaptation actions the municipalities might evaluate going forward. Additional COAST modeling could examine vulnerabilities of other assets, such as stormwater and wastewater systems, local economic impact or land use and growth patterns. Refer to the project summary in the Appendix. Portsmouth Coastal Resilience Initiative – *(report in process, completion by December 2012)*				
Energy Efficiency and Green Building	TOP 5 RESOURCES: EESE Board Final Report on the VEIC Independent Energy Study Field Guide to NH's Municipal Buildings and Energy Audit Guidelines NH Building Energy Code Compliance Roadmap Report	International Existing Building Code (IEBC) 2009—the IEBC encourages building rehabilitation and the restoration of historic properties. It provides a choice of three code methods that can address the majority of code challenges faced with historic structures. It has been written through a consensus process and widely tested. Adoption of this document will enable a	Additional Opportunities for Energy Efficiency in NH—energy-efficiency opportunities typically are physical, long-lasting changes to buildings and equipment that result in decreased energy use while maintaining the same or improved levels of energy service. This study shows that there is still significant savings potential in NH for cost effective electric and natural gas	Education on energy efficiency, renewable energy, and building codes for municipal inspectors, builders, and architects. Number of home starts.	Number of home starts. Number of Energy Star homes completed. Number of net zero energy homes completed.	Number of home starts. Number of Energy Star homes completed. Number of net zero energy homes completed.

Related Plan Components	Existing Resources	Existing Policies, Principles, Goals, and Questions to be Addressed	Metrics			
			Baseline Data: Existing Conditions and Trends	Short Term Planning Process (1-3 Years)	Mid Term Benchmarks (3-5 Years)	Long Term Implementation Effect (5-20 Years)
	Feasibility Study on Renewable Energy and Distributed Generation Potential at State Facilities Municipal Energy Master Plan chapters/local Energy committees ADDITIONAL RESOURCES: NH Energy Policy Study NH CORE Energy Efficiency Programs Tools: EPA Portfolio Manager, STOCC, EPA Financial Evaluation Calculators, My Energy Plan Financial resources: DSIRE - Database of State Incentives for Renewable Energy ISO New England US Green Building Council Better Buildings Program	community to capitalize on one of its most important resources, underutilized building stock. NH has adopted 2009 IEEC Building Energy Code. Energy Efficiency, Renewable Energy, and Historic Preservation: a guide for Historic District Commissions—the guide offers: • Introduction to local energy and sustainability committees for historic preservationists, • Specific ways for preservationists and local energy groups to work together, • Details about energy efficiency measures that protect historic value of properties, • Examples of successfully employed renewable energy applications within historic districts, • Answers to frequently asked questions from building owners and members of local energy committees, • Resources for further research and information. Remove barriers to alternative financing, including education to municipalities about power lease agreements and their legality Energy Policy Act (RSA 378:37, New Hampshire Energy Policy, 1990) establishing the policy that each electric utility complete a least cost integrated resource plan (IRP) at least biannually, and indicating that it is the policy of the state that energy be provided at least cost. Electric Utility Restructuring Act (RSA 374-F: Electric Utility Restructuring, 1996) creating the goal of developing a competitive marketplace for wholesale and retail electricity based upon the principles of system reliability, customer choice, unbundled services and rates, open access to transmission and distribution (T&D), universal service for all customers/members,2 etc. Renewable Portfolio Standard (RSA 362-F: Electric Renewable Portfolio Standard, 2007)	energy-efficiency measures and practices (and associated oil and propane savings) *(pg 5)*. NH Building Energy Code Compliance Roadmap Report—US buildings use more energy and emit more carbon dioxide than either the industrial or transportation sectors *(Executive Summary, pg 1)*. NH Building Energy Code Compliance Roadmap Report—this report identifies potential energy savings of 0.56 trillion BTUs per year and potential carbon dioxide emissions reductions of 0.03 million metric tons per year in NH through verified implementation and enforcement of improved energy codes in the state *(Executive Summary, pg 3)*. NH Building Energy Code Compliance Roadmap Report—the baseline level of compliance with building energy code in NH was estimated at approximately 45%. This means that NH has a great opportunity to capture substantial energy savings and related benefits through increased compliance with the state's current building energy codes *(Executive Summary, pg 2)*. The Greenest Building: Quantifying the Environmental Value of Building Reuse—this study reveals that the reuse and retrofit of equivalent size and functionality can, in most cases, meaningfully reduce the negative environmental impacts associated with building development. • Climate change reductions can be realized by reusing and retrofitting existing buildings rather than demolishing and replacing them with new construction. • The study uses a Life Cycle Analysis (LCA) methodology to compare the relative environmental impacts of building reuse and renovations versus new construction over the course of a 75-year life span. • Even assuming that a new building will			

Related Plan Components	Existing Resources	Existing Policies, Principles, Goals, and Questions to be Addressed	Metrics			
			Baseline Data: Existing Conditions and Trends	Short Term Planning Process (1-3 Years)	Mid Term Benchmarks (3-5 Years)	Long Term Implementation Effect (5-20 Years)
		requiring each supplier of electricity in New Hampshire to obtain 23.8% of their electricity from renewable energy resources by 2025. Net Metering Statute (RSA 362-A: Limited Electrical Energy "Producers Act, Net Energy Metering, 1998, 2007) providing standard tariffs (i.e. payment rates) for customer-sited renewable energy. Distributed Energy Resources Statute (RSA 374-G: Electric Utility Investment in Distributed Energy Resources, 2008) aiming to stimulate utility investments in distributed generation. Energy Commissions Statute (RSA 38-D: Energy Commissions, 2009) enabling municipalities to create or endorse existing groups to serve as Local Energy Commissions to assess local energy use and cost, and make recommendations including regarding energy conservation, energy efficiency, energy generation, and zoning practices. 25 by '25 Renewable Energy Initiative (2006) endorsed by the Governor that seeks to produce 25% of the energy consumed in the state from sustainable energy resources by 2025. Renewable Energy Property Tax Exemption (RSA 72:61-72) allows municipalities to exempt the value of specific renewable energy features (e.g., solar, biomass) from tax assessments. RSA 155 NH Building Code any new construction, reconstruction…using state funding…shall meet a high performance, energy efficient, sustainable design standard determined by the commissioners of the department of environmental services, department of administrative services, in consultation with… can recoup incremental costs of implementing requirements … within a 10 year period	operate at a 30% greater efficiency than an existing building, it can take between 10 and 80 years for a new, energy efficient building to overcome the climate change impacts that occur during construction. • It should be noted, however, that the study also finds the benefits of building may be reduced or eliminated depending on the type and quality of materials selected for the rehab project.			

Climate Change and Energy Efficiency TASC:

Executive Summary on Climate Change in New Hampshire

[from Climate Change in the Piscataqua/Great Bay Region: Past, Present, and Future" (UNH 2011) available online at CarbonSolutionsNE.org]

Earth's climate has varied throughout time and it will continue to change into the future. However, an overwhelming body of scientific evidence indicates that human activities – including the burning of fossil fuel for energy, clearing of forested lands for agriculture, and raising livestock – are now a significant and growing force driving change in the Earth's climate system. Research shows how the climate of New Hampshire and specific regions of the state has changed over the past century and how the future climate of the region will be affected by human activities that are warming the planet.

Overall, New England has been getting warmer and wetter over the last century, and the rate of change has increased over the last four decades.

- Detailed analysis of data collected at four meteorological stations (Durham and Concord NH; Lawrence, MA; and Portland, ME) in and around the region show that since 1970, mean annual temperatures have warmed, with the greatest warming occurring in winter.
- Average minimum and maximum temperatures have also increased over the same time period, with minimum temperatures warming faster than mean temperatures.
- Both the coldest winter nights and the warmest summer nights are warming as well.

Over the past four decades, annual precipitation has increased and extreme precipitation events - more than one inch of precipitation in 24 hours and more than four inches of precipitation in 48 hours - have increased across New England. While the amount of snowfall and the number of snow-covered days has varied over the past six decades, there are no significant trends. Annual discharge has increased in many major river systems, due primarily to increases in flow during the fall. More than a century of observations shows that lake ice-out dates on Lake Winnipesaukee and Sebago Lake are occurring earlier today than in the past. Data collected from ships, buoys, and other observational platforms show that the rate of warming of sea surface temperatures in the Gulf of Maine has quadrupled over the last four decades.

As greenhouse gases continue to accumulate in the atmosphere, seasonal and annual temperatures will rise. Summer temperatures will experience the most dramatic change and extreme heat days are projected to occur more often, and to be hotter. Under a higher emissions scenario, these hot days will increase, raising concerns regarding the impact of extreme, sustained heat on human health, infrastructure, and the electricity grid. These concerns are further exacerbated by projections of increases in very hot days.

Extreme cold temperatures are projected to occur less often, and cold days will be warmer than in the past. Very cold days, where minimum temperature falls below 0^{o}F, are projected to drop from their current average. Coldest temperatures of the year are also expected to warm. These changes will reduce winter heating bills and the risk of cold-related accidents and injury. However, they may also lift the cold temperature constraints currently limiting some pest and invasive species to more southern states, and simultaneously reduce the number of chilling hours experienced each year required for iconic crops such as berries and fruit.

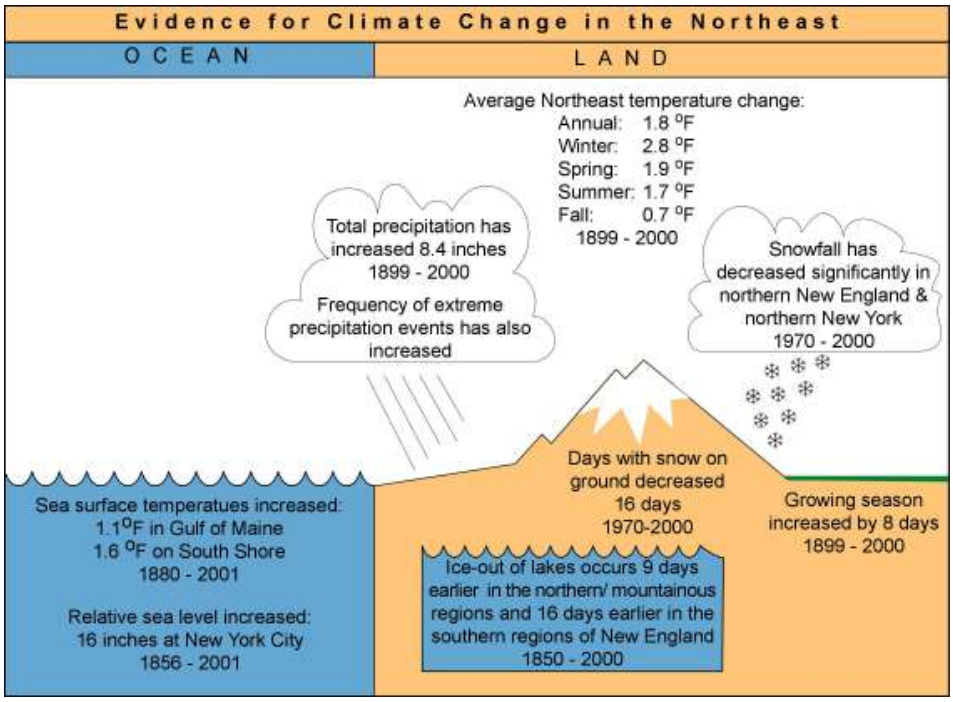
Annual average precipitation is projected to increase by end-of-century. Larger increases are expected for winter and spring, exacerbating concerns regarding rapid snowmelt, high peak stream flows, and flood risk. It is likely that New Hampshire can expect to see more extreme precipitation events in the future, particularly under the higher emissions scenario relative to the lower emissions scenario. Under the higher emissions scenario, the number of months in drought conditions is likely to increase.

Changes in climate over the past several decades are already having a significant impact on New Hampshire with projected changes in the climate continuing to impact ecosystems and society in a range of ways. Because some future changes are inevitable, smart choices must be made to ensure our society and our environment will be able to adapt. But with prompt and sustained actions that improve the efficiency with which energy is used and significantly enhance sources of renewable energy, many of the most extreme consequences of climate change can be avoided and their worst impacts reduced.

The many resources available about climate change in New Hampshire will provide local and regional stakeholders with critical data and frameworks for decision making and serve as a foundation for the development of local and regional climate change adaptation plans. These plans can incorporate short-term and long-term strategies as well as adaptive measures to reduce risk and vulnerability of the people, physical assets and natural resources of our state.

Indicators of Climate Change in the Northeast (Wake, 2005) Summary

Summary Figure of Changes Due to Climate



Temperature.

There is also a trend towards warmer temperatures over the period of record. Based on the linear trend, the Northeast's average annual temperature has increased by about 1.8o F since 1899. The 1990s were the warmest decade on record. Over the last 30 years, annual average temperatures have increased 1.4o F. Note that the coastal regions of Massachusetts, New Jersey, New York, Connecticut and Maine have all warmed more than the Northeast average. Over the last 100 years, winter (December to February) temperatures show the greatest seasonal rate of warming (2.8o F). Even more striking is the 4.4oF increase in winter temperatures over the last 30 years (1970-2000). If emissions of greenhouse gases continue to increase, it is likely that the Northeast's temperature will also continue to rise. However, due to the uncertainties of future greenhouse gas emissions and the complexity of the climate system, it is impossible to predict what the exact consequences will be for the region.

Growing Season

Regional growing seasons are showing a long-term trend. When the station data are averaged together, the overall increase (from linear regression) is 8 days. Collectively, statistical analysis of the results indicated an average advance in spring bloom of about 4 to 8 days in the Northeast during the latter half of the 20th century.

River Flows

The total annual days of ice-affected flow decreased significantly over the 20th century at 12 of the 16 rivers studied. On average, for the nine longest-record rivers, the total annual days of ice-affected flow decreased by 20 days from 1936 to 2000, with most of the decrease occurring from the 1960s to 2000.

Lake Ice-Out

In general, lakes farther from the ocean and at higher elevations show smaller decreases in the length of ice cover. Lakes at higher latitudes show smaller but equally significant warming trends over the past 150 years. Lakes with larger climate variability, those prone to inclement weather and large amounts of precipitation show ice-out dates more statistically dependent on local events. Overall, ice-out dates were 9 days and 16 days earlier between 1850 and 2000 in the northern/mountainous and southern regions of New England respectively.

Precipitation

Despite the overall increase in precipitation, significant spatial variability exists (Figure 2). Some stations have experienced up to a 60 percent increase in precipitation over the past century, while others have experienced a slight decrease. The stations with the greatest increases tend to be either near the Atlantic Coast or major bodies of water (the Great Lakes and Lake Champlain).

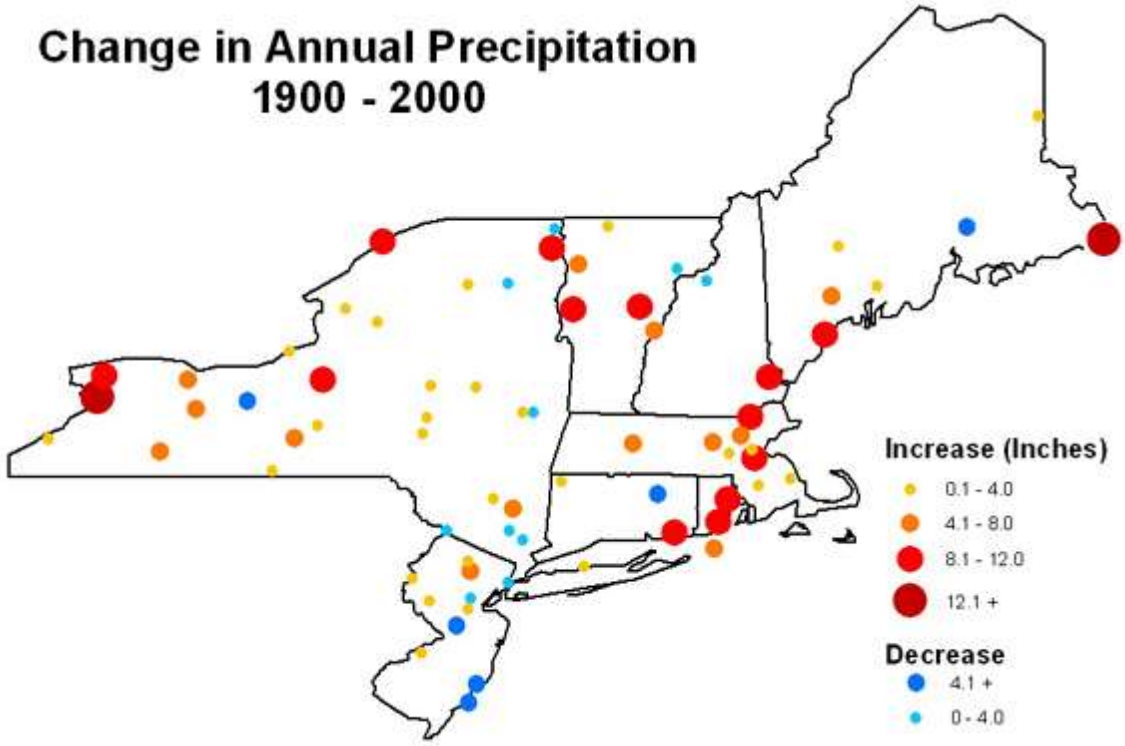


Figure 2: Map illustrating change (from linear regression) in total average annual precipitation for stations from 1900 to 2000. Points labeled red or orange indicate stations that have experienced an increase in total annual precipitation; blue indicates a decrease.

Every station investigated reveals an increase in extreme precipitation events during the 1980s and 1990s, as compared with the early 1900s.

Sea Level Rise

The average rate of global sea level rise has been greater in the 20th century than the 19th century, based on the few long-term tide-gauge records. In New York City, where sea level data has been collected for about 150 years, sea level has risen about 1.2 inches per decade, with small inter-annual fluctuations. The majority of the change is likely due to the slow geological settling of the region, but at least part of it can be explained by the thermal expansion of the upper layers of the ocean due to the 0.7

^{o}F warming of the past century.44 As human activity continues to influence global climate, it is likely that the rate of sea level rise will increase over the coming century. The predicted global average sea level rise from 1990 to 2100 lies in the range of 4.3 to 30.3 inches. Overall the SST in the Gulf 0f Maine and Massachusetts' south shore has warmed significantly, with an increase of 1.1 ^{o}F (8 percent) in the Gulf of Maine and 1.6 ^{o}F (8 percent) on the south shore. Most of this warming has taken place in the spring and summer months, where there has been an increase of about 1.3 to 1.8 ^{o}F in both locations (Table 1). These regional trends are generally consistent with global records of SST, which reveal a rapid warming from 1905 to 1940 followed by a slight increase from 1940 to 2001.

CRE-Coast Project in the Hampton-Seabrook Estuary

The CRE-COAST (Climate Ready Estuaries-Coastal Adaptation to Sea Level Rise Tool) project area included the towns of Hampton, Hampton Falls and Seabrook and focused on modeling protection of critical municipal facilities with structural berms under future projected scenarios for sea level rise and storm surge. The COAST model shows, where the adaptation actions are implemented, benefits in the form of avoided damages outweigh adaptation costs. Investing in adaptation would thus be likely to provide a high rate of return. Even without sea level rise (SLR), the selected adaptation would provide benefits in the form of avoided storm surge (SS) damages. The models developed for this project are useful for weighing opportunities and making decisions concerning land use in coastal flood plains. The models are not designed, however, to predict the future developed landscape or to estimate engineering or other costs with great degrees of certainty. They are intended to foster engaged dialogue about a wide range of adaptation actions the municipalities might evaluate going forward. Nevertheless, given the benefit-cost ratios identified for the adaptation actions selected, the stakeholder group may wish to consider these adaptation actions in greater detail. Refer to the project summary in the Appendix.

Additional caveats include that it is very unlikely that damages from SLR and SS will actually accrue to existing real estate in the manner depicted. This is partly due to the difficulty of predicting and incorporating ongoing, small scale adaptation actions of individual property owners into the model. COAST assumes that, unless an adaptation action is taken, property owners rebuild each year to the original building conditions if they are damaged in a year. In reality, individuals will continually adjust to SLR and SS, incrementally over time. Further, the vulnerability assessment is limited by the type and number of assets modeled which in this case focused on values of critical municipal facilities. The results are valuable, however, in both visualizing the scale and range of vulnerabilities faced by these towns and in beginning to plan a coherent response to SLR and SS events that can be reasonably anticipated.

Other key points from the project are summarized below:

- Adaptation actions are expected to substantially reduce community costs and vulnerability compared to taking no action to adjust to increasing coastal water levels and severe storm events.
- Actions should, if possible, be compatible with greenhouse gas mitigation.
- Historic flooding risk is NOT a good predictor of the level of risk communities will face moving into the future: there is a need to plan proactively for more flooding.
- Damage costs and adaptation designs and costs are very approximate; more detailed analysis will be necessary before particular actions are taken.
- Adaptation strategies should also consider other regional climate stressors such as increases in extreme rainfall, temperatures, and wind.
- A comprehensive adaptation strategy is needed that includes both “here and now” actions and actions to be taken later but planned for now.

Future Evaluation. The NH COAST sessions simply served as a catalyst for new discussions – discussions that communities have demonstrated that want to have, but haven’t had the forum facilitation, and/or technical information to do so. The COAST tool and stakeholder process has helped the three communities involved to develop robust, adaptive capacity in the face of these threats. Additional COAST model iterations could be run to examine vulnerabilities of other assets, such as stormwater and wastewater systems, local economic impact or land use and growth patterns.

Equity and Engagement TASC:

Research Matrix

Related Plan Components	Existing Resources	Existing Policies, Principles, Goals, and Questions to be Addressed	Metrics			
			Baseline Data: Existing Conditions and Trends	Short Term Planning Process (1-3 Years)	Mid Term Benchmarks (3-5 Years)	Long Term Implementation Effect (5-20 Years)
Vision	1. Master Plans; regional Master Plans 2. New Hampshire Demographic Trends in the Twenty-First Century 3. NH Center for Public Policy Studies From Tailwind to Headwind: NH Shifting Economic Trends 4. Facts and Figures The 2011 Annual Report on Disability in New Hampshire 5. Housing and School Enrollment In New Hampshire A Decade of Dramatic Change 6. Community Engagement Guide for Sustainable Communities – from Policylink 7. www.policylink.org - a national research and action institute advancing economic and social equity by lifting up what works 8. http://www.disabilitystatistics.org/	• Will this vision include everyone? • Does the vision account for the balance of distributed costs and benefits? • Is there a group of people who could either be unfairly burdened or unfairly advantaged by this vision? *4.* A more expansive analysis of the state's economic and demographic trends – with a timeframe of decades, not months or years – shows that the forces that helped create New Hampshire's advantage have largely run their course. As a result, the model that defined the state's economy since the 1980s – consistent population growth, increased productivity, and a more resilient economy than our competitors – no longer holds. After benefiting from nearly three decades of economic tailwinds, New Hampshire now faces a strong headwind: net out-migration, an aging population and decreased labor productivity.	• An increasing aging population • Aging citizens are not uniformly distributed across NH • NH can no longer count on immigration of economic growth: do we have other strategies for Economic Development Revenue vs. demand for services overall effect on tax base • Use demographic data on birth numbers from the Department of Education Long range planning numbers. Not as many children in State Long term planning (municipal school board) • Housing and School Enrollment 2011 the study finds, however, that declining school enrollment is pervasive in New Hampshire. Overall total enrollment in the state's public and private schools fell by more than 21,000 during the last decade. All but 37 of the state's 161 school districts experienced declining enrollment between 2000 and 2010. Today finds 20 of the state's school districts with fewer than 100 students, raising questions about their economic, if not educational, viability • Down shifting decreasing federal state funds affects the tax base at the local level baseline data for this Fiscal policy institute (Ross Gitell Carsey Institute) • According 2011 American Community Survey New Hampshire residents with a disability is estimated at 151,658 percent with a disability is estimated at 11.6 percent. • Minorities represented only 4.9 percent of NHs population in 2000. In 2010, minorities represented 7.7% of population. Minorities produced 50% of the population gain between 2000 and 2010 in NH. The minority population grew by (67.5%) to 101,400 during this period. The white population grew by (3.4%). The numerical gains were roughly equal, about 40,000 individuals, but	• Balancing Incentive Act • System Innovation Model • Long term planning for aging continues to track plans. • Gather data on birth numbers from the Department of Education • Regional vision statement drawing on local plans • Is the community adapting to demographic changes effectively? i.e. services, access, cultural awareness and infrastructure • Ensure communication and other access accommodations per grants and other requirements are met • Establish new way of collecting population projects so that informed decisions can be made past 2030 • Develop methodology to Track economic development revenue and demand for services • Change in school enrollment and the ability of regions to meet the challenges of increase/decrease enrollment	• Numbers of elders receiving home and community based services vs. institutional care. • Track demographic change data to identify underserved populations in community with a goal of including X % in the planning process • Track land use change and assessed property value changes • How many community vision include underserved populations	• Reassess regional vision statement • Explore tools to address demographic and population change(s)

Related Plan Components	Existing Resources	Existing Policies, Principles, Goals, and Questions to be Addressed	Metrics			
			Baseline Data: Existing Conditions and Trends	Short Term Planning Process (1-3 Years)	Mid Term Benchmarks (3-5 Years)	Long Term Implementation Effect (5-20 Years)
			minority growth rates were significantly higher. And we can expect that to continue. • Minority Youth Growth - While only 6.3% of adults are minority in NH in 2010, 12.2% of NH's youth are minority. The minority child population grew by 14,700, between 2000 and 2010. In comparison, the non-Hispanic white youth population diminished by 37,000 between 2000 and 2010. • Disability data: In 2010, the prevalence of disability in NH was 11% for persons of all ages. In 2010, the prevalence of the six disability types among persons of all ages in NH was: 1.7% reported a Visual Disability, 3.5% reported a Hearing Disability, 5.5% reported an Ambulatory Disability, 4.5% reported a Cognitive Disability, 2.1% reported a Self-Care Disability, 4.5% reported an Independent Living Disability. In NH in 2010, the prevalence of disability for working-age people (ages 21 to 64) was highest among Native Americans: 25.9% compared to 9.3% for Whites.			
Land Use	1. Land Conservation Plan for NH Coastal Watersheds 2. Innovation Land Use Planning Technique NH DES 3. Smart Growth for Coastal and Waterfront Communities 4. HEAL Action Plan 2008 Strategic Plan 2011 5. Livable Walkable Communities 6. Master Plans 7. Zoning Ordinances 8. Land Use and Environment Tool Group from Policylink Equitable Development Toolkit	• How have land use practices been a barrier to fair use of land and planning in the past? • When land use policies and practices hinder action or decision making for a group of people, have the pros and cons been weighed sufficiently to determine the greater good? • MPs seek to protect community character, balance budgets and ensure adequate delivery of services • Zoning implements MPs	• NH Obesity data book 2010 • 2011 NH State Health Profile Public Health • NH's population is growing less: it grew 6.9% between 2000 and 2010; 11.4% between 1990 & 2000; 20.5% between 1980 & 1990 (US Census) • From HEAL Matrix	• Public $ invested in community center areas (or within 1/2 mile) - requires tracking of state and municipal projects via GIS (and comparing with CCA GIS map) compared to underserved populations • Survey underserved populations such as disability or aging to determine location in need of improvements • Conduct a community visioning process based on the existing conditions and trends and the zoning that has generated them. • Track the number of smart growth and NH livability principles into the land use section happening at the municipal level •	• Monitor/track data on population/growth/economic changes • Track the number of Health Impact Assessments in the State of NH.	• Reassess effectiveness/initial policies and change as needed.
Implementation	1. Plan to Address Health Disparities and	• Are decision-makers clear about the	• Equity and Engagement population plan	• Best Practices/ Best	• Monitor/track data on	• Granite State residents have

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	Promote Health Equity in New Hampshire 2. King County Community Engagement guide and Community Engagement Worksheet – 2 short easy to use tools on the how to's of community engagement.	potential impacts on underrepresented groups? • Have decision-makers and community members been given the opportunity to explore the impacts of NOT acting as well as acting on proposed solutions? • Concern no grant money for implementation • There's no funding for implementation no resources • Implementation column long term effect.	to ensure no homeless veterans (MOVE UP) • Strategy groups consulted and needs included in the planning process come up with demographic data GSF Plan baseline in short term for example 1% of equity reached out.	Management across the landscape such as Health(data identified elements from plan incorporated into the state plan GSF)	population/growth/economic changes	choice in where to live based on individual or family needs
Housing	1. State Plan on Aging 2. Housing Family-Friendly Communities 3. The New Hampshire Homeless Veteran's Plan 4. State and Entitlement Consolidated Plans: a. Low Income Housing Tax credit b. HOME Investment Partnerships c. Tax-Exempt Bonds d. Community Development Block Grant e. Community Development Improvement Program f. Research g. As the State housing agency, New Hampshire Housing produces in annual rental cost survey, quartly housing updates on purchase prices and foreclosures, and research on a variety of topics such as workforce housing needs; age restricted housing needs, etc. 5. Low Income Housing Tax Credit Qualified Allocation Plan: 6. NH Healthy Home Statewide Strategic Action Plan 7. NH Consolidated 8. NH Qualified Allocation 9. Entitlement Consolidated Plans a. Manchester b. Nashua c. Portsmouth d. Dover e. Rochester 10. The Community Development Improvement Program 11. 10 Year Plan to End Homelessness a. Manchester	• Unaffordable housing is both a dimension of poverty and a contributor to poverty. • Promote social cohesion and reasonable levels of housing affordability through inclusive zoning, density bonuses, accessory units, and other tools • Are we increasing access to safe houses and apartments for working people? What mixed-use zoning policies are best to achieve this? • Have we empowered seniors and their families to make informed decisions about assisted and supported living options? • Are businesses and leaders able to hire people who are happy with their living choices relative to the proximity to work? • Do we have policies that increase opportunity and foster a successful housing market? • Healthy homes can be defined broadly to include physical and environmental factors, personal/behavioral factors, and allied initiatives such as smart growth and universal design Goals: • Empower older people, their families, and other consumers to make informed decisions about, and to be able to easily access, existing health and long term care options • The benefits of homeownership increases community pride, and build social capital. Financially, homeownership may not always be the optimal investment for a family, and other financial investments	• Greater need for mixed use development and walkable neighborhoods. • NH was ranked 4 in the nation for highest Median age of 41.1 according to the Census • In 2030,1 Out of every 5 Americans will be 65 years and older (U.S. Census Bureau, 2008) Families with young children make up 34% of the American population • In 2009, NH Homeless Management Information System identified 428 veterans who were homeless with estimates ranging as high as 600U.S.Department of Justice (BJS) Survey of Inmates in Local Jails (2002) data indicates that 9.3% of people incarcerated in jails are veterans. NH currently has 74 beds and 40 apartments designated as transitional housing. • In 2003, approximately 868 individuals in New Hampshire were diagnosed with lung cancer, and approximately 675 individuals died from it. While smoking is the leading cause of lung cancer, radon exposure is the second leading cause of lung cancer. In New Hampshire, an estimated 92 • lung cancer deaths a year are related to radon exposure • (6) In New Hampshire, approximately 10% of adults and 8% of children currently have asthma, costing the state an estimated $46 million each year. Asthma rates in New Hampshire are higher than the national averages, but similar to those of other New England states. • Establish the data on the number of new cases using public assistance individual or families.	• Little being done on statewide basis. • Some communities are addressing in their master planning. • NH Housing Authority has statistics on low income elder housing • Few choices available for middle income seniors looking to downsize. • Encourage policies to provide affordable housing • Encourage development with a mix of housing and employment opportunities • Encourage zoning that allows for smaller homes better suited to two- and three-person households • Encourage housing and mixed use development that meets the compact design principals found in RSA 9-B • Identify and encourage the adoption of local regulatory measures that facilitate the renovation of existing housing to better suit the needs of a population aging in place • Work with NH Homeless Management system to track the number of homeless veterans in regions • Collect data on region level of persons in homeless families and number of family shelter beds located in each RPC.	• Units of affordable housing and smaller homes constructed • Changes in regional VMT/length of commute • Increase household income through either economic opportunity or income subsidy to reduce housing cost burden • Monitor and track the number of inclusionary implementation statewide • Track the number of universal design projects happening statewide • Track the number of mortgage loans offered to low income or first time home buyers in the state. • Develop benchmark to reduce homeless veterans in the state of NH. • Evaluate age distribution • Monitor home ownership and rent statics	• Increased options and better choices available. • Increased turnover of housing stock. • More compact development, less sprawl • Reduced greenhouse gas production • Increased housing near areas served by transit • Increased housing near employment centers • Increased diversity of housing • More efficient use of existing municipal infrastructure (e.g., roads, water, sewer) • Reduce the number of homeless veterans

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	b. Nashua
	12. Institute for Children, Poverty, and Homeless
	13. Annual Town Reports
	14. Affordable Housing Toolgroup in PolicyLink Equitable Development Toolkit
	15. PolicyLink Info on Inclusionary Zoning
		may yield more stable and lucrative returns.
		
		• To eliminate homelessness among veterans in New Hampshire (NH) by ensuring all NH Veterans and their families, by 2014, have access to affordable housing and support services that promote independence and well-being.
		• Production of affordable rental housing for very low income families is a high priority. Affordable rental housing for people disabilities of very low and extremely low income elderly housing are also a high priority. Inclusionary zoning that enables the development of housing that can cater to the needs of varied income levels is encouraged, especially workforce housing near where people work.
		• Questions to be addressed track baseline Public Assistance data by Town using the annual reports
		• Promote residential development in areas with existing infrastructure to reduce tax burdens.
		• Environmental Impact
		  ○ Develop homes in a compact way to reduce VMT and CO2[iii]
		  ○ Develop homes in existing urban areas to reduce “drive till you qualify.”[iv]
		• State Statute – workforce housing, energy codes
		• Enable seniors to remain in their own homes with high quality of life
		• Adequate supply of affordable rental housing for low and very-low-income, elderly, and disabled people.
		• Adequate supply of workforce housing
		• Maximize energy efficiency in residential buildings
		• Compliance with current energy codes for new construction
		• Inclusionary zoning that enables the development of housing that can cater to the needs of varied income levels is encouraged, especially workforce housing
			• Declining school enrollment numbers
			• Existing conditions and trends too numerous to list. Visit the NHHFA website (www.nhhfa.org) and Research Library for detailed housing data, existing conditions and trends.
			• Home prices have declined just over 20% since 2007 and the number of home sales declined by nearly 50% between 2005 and 2011.
			• Residential rental costs have begun to increase again, increasing 3.3% statewide for a 2-bedroom unit, between 2011 and 2012.
			• Foreclosure activity in New Hampshire for the period January through June 2012 is down about 3% from the same period in the prior year. However, foreclosures remain a significant and ongoing problem for the housing market.
			• 61% of New Hampshire households earning less than 80% the median area income are paying more than 30% of their income for housing.
			• The Institute for Children, Poverty and Homelessness estimates that there are 754 persons in homeless families in the state of NH, approx. 726 number of family shelter beds in winter 2010. During 2008-09 school years 2130 students were homeless in NH.			

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		near where people work • Population has increased more in suburban areas resulting in low density land use • Promote and support safe, affordable and needed housing and related services for New Hampshire families and individuals through the efficient use of resources thereby contributing to the economic and social development of the State and its communities.				
Transportation	1. NH Livable Walkable Communities 2. New Hampshire Resident Views Use, Availability, and Need for Public Transportation 3. Alliance for Biking & Walking in the United States 4. Federal High Administration Livability In Transportation Guidebook	• Are our streets safe for cars, pedestrians, bicycles, motorcycles and scooters? • Can we take advantage of public investments in rail and public transportation? • Will more people of various income levels have access to a variety of modes of transportation? • Do our transportation systems reduce dependence on distant, expensive fuel sources? • New Hampshire Celebrates Wellness a not for profit organization strived to accomplish its goals by mobilizing, training, and supporting leaders from schools, worksites, older adult organizations, municipalities, and communities, to bring health initiatives back to their organization and their communities • Results from NH first statewide survey of residents perspectives the use, availability and need for public transportation • The Alliance for Biking &Walking's Benchmarking Project collects data from government and national data sources and through surveys to government officials and advocates. Results are published in this biennial Benchmarking Report to measure progress over time of the most-populous cities and states in regard to bicycling and walking. • America's transportation industry has built one of the world's largest and best highway networks, connecting people, businesses, and communities across the country, linked with extensive public	• One quarter (24.9%) of New Hampshire adults, 18% of third grade students and 11.7% of high school students are obese. 7 Overall, nearly two thirds (63.1%) of adults are overweight or obese. • Fifty -seven percent of respondents, representing more than 500,000 people in New Hampshire, would use public transportation to take care of every-day activities, such as getting to work, health care appointments, recreation, or shopping. • NH Ranked 32 Cycling to work and 17 walking to work in the 50 states.	• Numerous studies and ongoing plans • Track the number of ADA projects by municipality • Monitor the number of complete street projects. • Development of public private partnerships in Transportation planning related to equity • Track the number of SRTS projects in the state with number of participates to showcase success • Increase funding in transit oriented development • Investments in Intelligent Transportation Systems the example: software for COAST to help certain populations • Track the number of clients helped using ITS • Identify the RPC'S that have Title 6 documents and public participation plans in State • Measure the amount of Traffic calming • Promote & encourage complete streets • How we engaging	• Increase transportation options for underserved populations • Work with NH DOT and Federal Highway Administration to implement livability principals • Use Health Impact Assessments in the Transportation Process • Track the number of State projects that include bike and pedestrian. • Continue regional traffic count data make easily available • Monitor traffic safety issues • Assess commuter statistical data from US Census • Track demographic changes (population, income, age, etc.) • Track changes in housing and land use development patterns	

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		transportation systems in major metro areas. While nearly four-fifths of Federal Transportation funding goes to highway projects, almost 85 percent of people and jobs are in the metro areas which off the potential for significant improvements in multimodal travel choices. • State Plans (TIP, STIP & 10-Year) plan identify transportation infrastructure needs • SRTS plans indicate pedestrian infrastructure needs around schools • The various corridor studies identify infrastructure and safety needs				
Water Infrastructure	Water Sustainability Commission • Equity issues on wells contaminated-what are options people have? • Changing rate to comply with EPA standards. • Where do you get a testing KIT on Radon, Uranium and others? • What level of data do we have on residential systems • Number of people on wells high arsenic contamination families with low income. Power outages pumps don't work on.	• Have we identified if some groups are more vulnerable than others to water scarcity or water degradation? • Is there an appropriate balance between the cost to residential taxpayers and industrial tax payers? • Are the costs for water infrastructure and water treatment being shared among end users? • Do we have policies that insure access to clean water in the event of an emergency? • Do towns provide water?	• Less money at both the state and local level for water infrastructure (NH Center for Public Policy Studies)	• Identify organizations that provide clean water in case of emergency • Track Impervious cover per capita (change in) in region	• Monitor/track data on population/growth/economic changes	• Reassess effectiveness/initial policies and change as needed. • % pop served by public well-water • % pop served by public dw (not including small systems?)
Environment	1. EPA New England's Environmental Justice Action Plan For Fiscal Year 2009 2. USDHHS 2012 Environmental Justice Strategy and Implementation Plan 3. Scorecard: The Pollution Information Site *The "Good Guide" led by Professor Dara O'Rourke of UC Berkeley* 4. *Hidden Hazards: A Call to Action for Healthy Livable Communities December 2010 (Los Angeles)* 5. EPA New England Pollution Databases and Tools Provides mapping by census block to state for demographics and environmental hazards 6. NH Statewide Comprehensive Outdoor Recreation 7. Land Use and Environment Tool Group from Policylink Equitable Development Toolkit	• Are we protecting natural resources across high and low income areas of the region and state? • Have we identified improvements in a way that fairly distributes investments across people and groups? • How are EPA and NH DES effecting change through their Environmental Justice policies? • EPA New England's (NE) commitment to environmental justice is evidenced by its multi-faceted approach to ensuring the continued integration of environmental justice into regional programs, policies, and activities. • The NH Department of Environmental Services adopted an Environmental Equity Policy in 1994 (see pII-5 of the Performance Partnership Agreement for Federal Fiscal Years 2012-2014)	2002 Data from Scorecard Distribution of Environmental Burdens in NH (this information is also available by local units): Ratios of White and People of Color • Releases of Toxic Chemicals 1.28 • Cancer Risks from Air Pollutants 1.26 • Superfund Sites 1:1.68 • Facilities w/Air Pollution 2.28 Ratios by Below and Above Poverty: • Releases of Toxic Chemicals 0.80 • Cancer Risks from Air Pollutants 1.11 • Superfund Sites 0.89 • Facilities w/Air Pollution 2.44 For example: For each person above the poverty level, 2.44 persons below the poverty level live near more facilities emitting air pollution. (Substantial traffic could produce air pollution which is not taken into account in this study.)	• Strengthen research and advance data collection on the health and environment of minority and low-income populations. • Empower the public by improving access to data and research findings to enable the public to participate meaningfully in efforts to address the risks of adverse environmental exposures. • Work with State and Federal agencies already addressing this (see Existing Resources) to develop local strategies.	• Regulatory databases and emissions inventories will provide a synthesized analysis of the aggregate health impact made by all pollution sources. Examples that illustrate the failure of existing methodologies include: • Different pollution sources are regulated by different agencies which makes data synthesis difficult. • Multiple small polluters that are not required to report to emissions inventories collectively emit significant levels of air pollution locally when they are numerous or clustered together. • Highly polluting small-scale businesses such as auto paint	Low-income and minority populations are not subjected to the majority of our polluting industry and transportation, but share equally in the negative environmental impacts of our culture.

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					and body shops are not regulated at all. • Locational errors of polluting sources often occur. • Environmental Justice Issues often not addressed within local ordinances and regulations.	
Economic Development	1. NH's Silver Tsunami: Aging and the Healthcare System 2. Putting Childcare in the Regional Economy 3. Children's Health Insurance Programs in New Hampshire 4. Plan to Address Health Disparities and Promote Health equity in New Hampshire 5. Immigrant and Refugee Report Calling NH Home by Cathy Chesly 6. 2010 Hunger in America Local Report Feeding America 7. States 10 Year Plan to End Homelessness 8. Residents Owned Community Development Financial Institutions Info - PolicyLink	• How are businesses burdened by the policies we have for a variety of land use, transportation, housing, etc. issues? • Do we ask businesses who benefit from ED policies to stay engaged in the community? • Health outcomes represent how healthy a county is while health factors represent what influences the health of the county	• Fewer older adults able to afford retire due to economic downturn/investment & real estate losses. • Company downsizing resulted in older worker job loss and underemployment. • Significant need for more healthcare workers at all levels. • According to Feeding America Map New Hampshire food insecurity rate is 10.9% the average cost of a meal is $2.64. • Desire for conserved land conflict with the development for commercial purposes inhibits job growth?	• Health care workforce development projects • Look at the effect of the implementation of the Affordable Care Act in NH 2014 impacts on small business cost of doing business creation of new jobs health trends • Identify programs in the state that educate and provide training to underserved populations • Encourage participation in the planning process underserved populations • Engage in the recruitment and outreach events that encourage the retention of young people to grow and diversify the workforce • Encourage participation in the planning process underserved populations	• Number of elders still in workplace • Increases in numbers of physicians, nurses, and other health care workers. • Track programs that offer broadband to low income individuals in NH	• Quality of life and healthcare
Climate Change Impacts	1. Climate Trends in Extreme Precipitation for the Northeast United States 2. Preserving Assets in At-Risk Municipalities Financial Strategies for Climate Change Adaptation	• Have we identified groups of people as well as geographical areas where the vulnerability is greatest in dealing with sea level rise, increased storm intensity, and impacts of extreme heat? • How are our policies increasing opportunities for innovation? • Mitigation and Adaptation of Strategies for Global Change Coastal flooding, climate change and environmental Justice: Identifying obstacles and incentives for adaptation in two metropolitan Boston Massachusetts communities	• Environmental justice populations do not have an adaptation perspective or knowledge of any resources that could assist them with increased coastal flooding due to sea level rise. • Communities do not feel included in the planning processes within their communities. • Around the globe, four billion people are vulnerable, 325 million people are seriously affected and over 300,000 people die each year due to the impacts of climate change (GHF, 2009); the annual cost of these impacts is estimated to be $125 million USD. • A traditional focus of environmental justice claims has been to empower communities and highlight inequities in	• Most city plans do not target marginalized or more vulnerable populations, which may lead to more social inequities within the cities include in the planning process. • Existing cultural knowledge and values about adaptation to climate change must be part of the framework adaptation planning, if progress is to be made at the local level. • Populations reaching out during extreme weather profile of users that are opened during extreme weather events on temporary	• Encourage the development of green jobs that underserved populations could enter • Track the investment in the low income weatherization programs in NH • Be prepared to present funding resources along with the adaptation strategies as we found this to be the biggest concern in each community; the willingness to be involved in adaptation planning was there, but the financial resources for implementing them were not. • Engaging local residents at	

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			decision making in order to promote a fairer distribution of risks and benefits. However, in the face of dire, and possibly imminent, consequences of climate change, a call for more community awareness of and direct participation in the decision-making process may be a more beneficial goal (Stallworthy 2009).	basis collect this data. Public Safety Homeland Security and Emergency. • Number of FEMA disasters declarations over period of time.	the beginning of the planning process can create important educational opportunities and develop rapport, trust and consensus that are essential for moving from concept through implementation.	
Energy Efficiency and Green Building	1. New Hampshire Office of Energy and Planning Fuel Assistance Program 2. Multi-Family Developers Greener Homes Program 3. Promoting Low Impact Development in Your Community	• Are our policies adjusting to the current climate of available energy efficiency options? • Have we considered how our policies can provide for more cost effective places to live? • Promote and recognize sustainability in construction and rehabilitation of infrastructure (4) • Fuel Assistance Program provides income-eligible households with assistance in paying their energy bills during the winter heating season. Households where elderly, disabled persons, and/or young children reside receive priority. Benefits are calculated taking into account household income, energy costs, number of heating degree days within a region, and housing type. This targeting allows FAP to provide those households with the lowest incomes and highest energy costs with the highest benefits. Fuel Assistance benefits range from $120 to $975, depending on household income and energy costs. The average benefit is $500.	• The New Hampshire Fuel Assistance Program in Year 2010-2011 had 51,974 applications but certified 43.492 the average amount awarded was $689. The New Hampshire base grant award was $34,112,375.	• Track the amount of federal funds for fuel assistance and energy efficiency projects in the State of NH by region • Identify ways in which communities can reduce their energy needs & consumption(1); • Adopt a target of reducing energy use in all new buildings of 70% below the national average and renovate an equal amount of existing buildings to meet the same standards. • Track the number of homes on Green Homes Tourist		

[i] "Growing Cooler"
[ii] "Growing Cooler"
[iii] "Growing Cooler"
[iv] "Growing Cooler"