

OUR ECONOMY
North Country Regional Sustainability Plan

Appendices:

- A. Consortium and Working Group Member List*
- B. Summary of Baseline Data*
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A Consortium and Working Group Member List

North Country Cleaner Greener Sustainability Plan

Consortium Member List

| County | Primary Contact | Secondary Contact |
|-------------------------|--|---|
| Essex County | Garrett Dague Associate Planner | Sue Montgomery Corey Board of Supervisors |
| Franklin County | Tom Leitz County Supervisor | Chastity C. Miller District Manager Franklin County Soil and Water Conservation District |
| Lewis County | Eric Virkler Economic Development and Planning Planner | Renee Beyer Senior Planner |
| Hamilton County | Ann Melious Economic Development and Tourism Director | Bill Farber |
| Clinton County | Rodney Brown Deputy County Administrator, Deputy Clerk of the Legislature | |
| Jefferson County | Don Canfield Director of Planning | Bob Hagemann County Administrator |
| St. Lawrence | Keith Zimmerman Director Planning Office | Jon Montan Retired Planner |

North Country Cleaner Greener Sustainability Plan

Working Group Member List

| Working Group | County | Name | Employer/Affiliation |
|----------------------|---------------------|-----------------------|--|
| Energy | Clinton | Curt Gervich | SUNY Plattsburgh |
| Energy | Clinton | Curt Snyder | Crest Solar |
| Energy | Clinton | Jim Murray | Greenway Energy Solutions, Inc |
| Energy | Essex | Dan Mason | North Country Clean Energy Conference |
| Energy | Essex | Jeff Woods | North Country School |
| Energy | Essex | Jennifer Monroe | Community Power Network of NYS |
| Energy | Essex | John Culpepper | North Country Camp Treetops |
| Energy | Essex | Larry Masters | Biologist |
| Energy | Essex | Matt Foley | Riverrat Glass and Electric/Azure Mountain Power |
| Energy | Franklin | David Trudeau | Honeywell |
| Energy | Franklin | Greg Hart | Workforce Development Institute |
| Energy | Franklin | Jamie Rogers | ANCA |
| Energy | Franklin | Stephanie Ratcliffe | The Wild Center |
| Energy | Hamilton | Jack Valentine | Town of Indian Lake |
| Energy | Hamilton | Jon Voorheers | Indian Lake Hydro |
| Energy | Jefferson | Augustus Withington | Fourth Coast |
| Energy | Jefferson | Judy Drabicki | NYS DEC |
| Energy | Jefferson | Vanessa Lynn McKinney | Cornell Cooperative Extension |
| Energy | Jefferson/ Lewis | Kate Malinowski | NYS Tug Hill Commission |
| Energy | Lewis | Glen Gagnier | Lewis Co Development Corporation |
| Energy | Lewis | Joseph Lawrence | Cornell Cooperative Extension |
| Energy | Lewis | Katie Liendecker | Village of Lyons Falls |
| Energy | Regional | Jeff Forward | Yellow Wood |
| Energy | St. Lawrence | Art Garno | SUNY Canton |
| Energy | St. Lawrence | Dan Parker | Kruger Energy Inc. |
| Energy | St. Lawrence | Jason Clark | Business Development Corporation Greater Massena |

North Country Cleaner Greener Sustainability Plan

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| Working Group | County | Name | Employer/Affiliation |
|---------------------------------|---------------|-----------------------------|--|
| Energy | St. Lawrence | Amanda Lavigne | St. Lawrence University |
| Energy | St. Lawrence | Ben Dixon | St. Lawrence University |
| Energy | St. Lawrence | Doug Welch | SLS Energy Task Force |
| Energy | St. Lawrence | Jill Chamberlain Winters | NY Power Authority |
| Energy | St. Lawrence | Jon Montan | St. Lawrence County |
| Energy | St. Lawrence | Klaus Proemm | NYS Office of Temporary & Disability Assistance |
| Energy | St. Lawrence | Leigh Rodriguez | St Law Co Industrial Development Agency |
| Energy | St. Lawrence | Patrick Kelly | St Law Co Industrial Development Agency |
| Energy | St. Lawrence | Relani Prudhomme | The Occupational Health Clinical Center of the North Country |
| Energy | St. Lawrence | Richard Burns | National Grid |
| Energy | St. Lawrence | Robin McClellan | SUNY Canton |
| Energy | St. Lawrence | Stephen Bird | Clarkson University |
| Energy | St. Lawrence | Susan Powers | Clarkson University |
| Energy | St. Lawrence | Ann Heidenreich | SLC No Country Symposium/Energy Task Force |
| Energy | Regional | Carol Murphy | Alliance for Clean Energy New York |
| Energy | St. Lawrence | Fred Hanss | Potsdam Office of Planning and Economic Development |
| Energy | Regional | Maria Leonardi | Northern Forest Center |
| Energy | Jefferson | Rob Company | Fourth Coast |
| Energy | Regional | Sean Ross | Lyme Timber |
| Energy | Regional | Tom Beck | ReEnergy Holdings |
| Energy | Regional | Joe Short | Northern Forest Center |
| Economic Development | Clinton | Erin Hynes | The Development Corporation |
| Economic Development | Essex | Dave Mason | Keene Broadband Project |
| Economic Development | Essex | Jenn Holdereid | The Golden Arrow |

North Country Cleaner Greener Sustainability Plan

Working Group Member List

| Working Group | County | Name | Employer/Affiliation |
|-----------------------------|---------------|-----------------|---|
| Economic Development | Franklin | Zoe Smith | Wildlife Conservation Society |
| Economic Development | Hamilton | J. Justin Woods | Ticonderoga Revitalization Alliance |
| Economic Development | Jefferson | Carl McLaughlin | Fort Drum Regional Liaison Organization |
| Economic Development | Jefferson | Dave Zembiec | JCIDA |
| Economic Development | Jefferson | Eric Constance | Small Business Development |
| Economic Development | Jefferson | John Bartow | Tug Hill Commission |
| Economic Development | Jefferson | Tom Sauter | DANC |
| Economic Development | Lewis | Rick Porter | Lewis Co. IDA |
| Economic Development | Regional | Dan Kelleher | The Adirondack Park Agency |
| Economic Development | Regional | Steve Erman | ANCA |
| Economic Development | Hamilton | Brian Wells | Town of Indian Lake |
| Economic Development | Essex | Craig Brashaer | Tahawus Lodge Center |
| Economic Development | Regional | David Dungate | ACT Bioenergy LLC |
| Economic Development | Franklin | Ernest Hohmeyer | Hohmeyer Lodge Lake Clear |
| Economic Development | Regional | Jim Murphy | Adirondack Economic Development Corporation |
| Economic Development | St. Lawrence | Pat Curran | Curran Renewable |
| Economic Development | Regional | Paul Shatsoff | Workforce Dev. Inst. |
| Economic Development | Essex | Rebecca Kelly | Tahawus Lodge Center |
| Economic Development | Regional | Scott Travers | Minas Basin Pulp & Power Co. Ltd. |

North Country Cleaner Greener Sustainability Plan

Working Group Member List

| Working Group | County | Name | Employer/Affiliation |
|---|-----------------|--------------------|--|
| Livable Communities & Land Use | Clinton | Glen Cutter | Clinton County Planning Department |
| Livable Communities & Land Use | Essex | Alan Hipps | Housing Assistance Program of Essex Co |
| Livable Communities & Land Use | Essex | Emily Kilburn | Adk Community Housing Trust |
| Livable Communities & Land Use | Essex | Hilary Smith | The Nature Conservancy |
| Livable Communities & Land Use | Essex | Jim Herman | Adk Futures |
| Livable Communities & Land Use | Essex | Leslie Karasin | Wildlife Conservation Society |
| Livable Communities & Land Use | Essex | Ray Curran | Adirondack Sustainable Communities |
| Livable Communities & Land Use | Essex | Stu Baker | Ticonderoga Planning Board |
| Livable Communities & Land Use | Franklin | Boyce Sherwin | Regional Solutions |
| Livable Communities & Land Use | Franklin | Brett McLeod | Paul Smiths College |
| Livable Communities & Land Use | Franklin | Dan Spada | APA |
| Livable Communities & Land Use | Franklin | Ellen Beberman | Common Ground Garden/AFMC |
| Livable Communities & Land Use | Franklin | Mary Scharf | Town of Malone |
| Livable Communities & Land Use | Franklin | Todd Smith | Adirondack Sustainable Communities |
| Livable Communities & Land Use | Franklin/ Essex | Jesse Schwartzberg | Black Mountain Design Build LLC |
| Livable Communities & Land Use | Hamilton | Brenda Valentine | Indian Lake Main Street Revitalization Committee |
| Livable Communities & Land Use | Jefferson | Andrew Nevin | Jefferson County Planning Department |
| Livable Communities & Land Use | Jefferson | David Crandall | Environmental Design and Research |
| Livable Communities & Land Use | Jefferson | Denise Young | Fort Drum Regional Health Planning Organ. |

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|---|---------------|-----------------------|--|
| Livable Communities & Land Use | Jefferson | Faith Lustik | Jefferson County Public Health |
| Livable Communities & Land Use | Jefferson | Jennifer Voss | Jefferson County Planning Department |
| Livable Communities & Land Use | Jefferson | Kristi Dippel | Clayton Local Development Corp |
| Livable Communities & Land Use | Jefferson | Phil Street | Tug Hill Commission |
| Livable Communities & Land Use | Jefferson | Vanessa Lynn McKinney | Cornell Cooperative Extension |
| Livable Communities & Land Use | Lewis | Renee Beyer | Lewis Co Planning Department |
| Livable Communities & Land Use | St Lawrence | Richard Grover | Earthworks |
| Livable Communities & Land Use | St Lawrence | Doug Welch | St Lawrence Co Planning Board/North Country Symposium |
| Livable Communities & Land Use | St Lawrence | Mark Dzwonczyk | Nicholville Telephone Co |
| Livable Communities & Land Use | St. Lawrence | Chelle Lindahl | Adk Sustainable Living Project |
| Livable Communities & Land Use | St. Lawrence | Kristen vanHodzeweche | SUNY Potsdam |
| Livable Communities & Land Use | St. Lawrence | Relani Prudhomme | The Occupational Health Clinical Center of the North Country |
| Livable Communities & Land Use | Clinton | David Wurzburg | United Helpers |
| Livable Communities & Land Use | Franklin | Greg Hill | Retired |
| Livable Communities & Land Use | Regional | James Martin | The LA group |
| Livable Communities & Land Use | Franklin | Jamie Konkoski | Public Health |
| Livable Communities & Land Use | Regional | Ron Testa | RJ Testa and Associates Architects |
| Transportation | Clinton | James Bosley | Clinton Co Public Transportation |
| Transportation | Essex | Nancy Dougal | Essex County |

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Working Group Member List

| Working Group | County | Name | Employer/Affiliation |
|---------------------------|---------------|-------------------|--|
| Transportation | Essex Co | Randy Douglas | Town of Jay |
| Transportation | Franklin | Jim Ellis | Adirondack Scenic Railroad |
| Transportation | Franklin | Stephen DeHond | Green Circle |
| Transportation | Hamilton Co | Tracy Eldridge | Hamilton Co |
| Transportation | Jefferson | David Bradford | SUNY Canton |
| Transportation | Jefferson | Hartley Bonisteel | Jefferson County Planning Dept. |
| Transportation | Jefferson | Howard Ganter | Jefferson Rehabilitation Center |
| Transportation | Jefferson | Robert Freeman | Freeman Bus/Clarence Henry Coach |
| Transportation | Regional | Scott Docteur | DOT Region 7 |
| Transportation | St. Lawrence | John Casserly | Yes 11! |
| Transportation | St. Lawrence | Toby Bogart | St. Lawrence Co |
| Transportation | Regional | John Danis | Development Authority of the North Country |
| Transportation | Franklin | John Hutchins | Frank Co |
| Transportation | Oneida | Dawn Klemm | Remsen-Lake Placid Travel Corridor NYSDOT |
| Transportation | Lewis | Joseph Langs | Lewis Co |
| Transportation | Jeff Co | James Lawrence | Jefferson Co |
| Transportation | Multiple | Gerardo Mendoza | NYSDOT |
| Transportation | Jefferson | Sam Purington | Volunteer Transportation Center |
| Transportation | Regional | Barbara Piersma | Adirondack Scenic Railroad |
| Transportation | Clinton | Albert Rascoe | Clinton Co |
| Transportation | St. Lawrence | Nancy Robert | St Lawrence Co |
| Transportation | Essex Co | David Rotella | Essex Co |
| Transportation | Franklin | Mary Shantie | Franklin County |
| Transportation | Regional | Denise Watso | Department of Transportation |
| Transportation | Jefferson | Kathy Webster | City of Watertown |
| Working Landscapes | Clinton | Anita Demming | Cornell Cooperative Extension |
| Working Landscapes | Clinton | Peter Hagar | Cornell Cooperative Extension |

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Working Group Member List

| Working Group | County | Name | Employer/Affiliation |
|---------------------------|---------------|-----------------------|---|
| Working Landscapes | Clinton | Tony LaPierre | Clinton Co Farm Bureau |
| Working Landscapes | Essex | Connie Prickett | Adirondack Land Trust |
| Working Landscapes | Essex | Daniel Spada | Adirondack Park Agency |
| Working Landscapes | Essex | Laurie Davis | Adirondack Harvest |
| Working Landscapes | Essex | Robert Stegeman | Department of Environmental Conservation |
| Working Landscapes | Franklin | Bernadette Logazar | Cornell Cooperative Extension |
| Working Landscapes | Franklin | Brett McLeod | Paul Smiths College |
| Working Landscapes | Franklin | Chastity Miller | Franklin Co SWCD |
| Working Landscapes | Franklin | Joe Orefice | Paul Smiths College |
| Working Landscapes | Franklin | Melinda Little | Farm to Family Food Network |
| Working Landscapes | Franklin | Sean Ross | Lyme Timber |
| Working Landscapes | Franklin | Travis Zedick | Sudexo |
| Working Landscapes | Franklin | Rich Redman | |
| Working Landscapes | Jefferson | Brian Wohnsiedler | Jefferson County Soil and Water Conservation District |
| Working Landscapes | Jefferson | Jay Matteson | Jeff County Ag Development Corp |
| Working Landscapes | Jefferson | Jennifer Harvill | NYS Tughill Commission |
| Working Landscapes | Jefferson | John Bartow | Tughill Commission |
| Working Landscapes | Jefferson | Michael Richardson | Fort Drum Plans, Analysis and Integration Office |
| Working Landscapes | Jefferson | Vanessa Lynn McKinney | Cornell Cooperative Extension |
| Working Landscapes | Lewis | Linda Garrett | Tughill Tomorrow Trust |
| Working Landscapes | Lewis | Michele Ledoux | Cornell Cooperative Extension |
| Working Landscapes | Regional | Colin Beier | SUNY ESF |
| Working Landscapes | Regional | Eric Dumond | RE Energy |
| Working Landscapes | Regional | Hilary Smith | The Nature Conservancy |
| Working Landscapes | Regional | Jeff Forward | Yellow Wood |
| Working Landscapes | Regional | Neil Woodworth | Adirondack Mountain Club |
| Working Landscapes | Regional | Sarah Metzgar Boggess | RE Energy |

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|-----------------------------|---|--------------------|---|
| Working Landscapes | Regional | Sloane Crawford | Department of Environmental Conservation |
| Working Landscapes | Regional | Timothy Barnett | The Nature Conservancy |
| Working Landscapes | St. Lawrence | Thomas Cutter | |
| Working Landscapes | St. Lawrence | Chelle Lindahl | Adk Sustainable Living Project |
| Working Landscapes | St. Lawrence | Pat Curran | Curran Renewable Energy |
| Working Landscapes | St. Lawrence | Ross Whaley | ADK Landowners |
| Materials Management | Clinton | Jonathon Ruff | City of Plattsburgh |
| Materials Management | Essex | Dave Reckahn | Essex Co Solid Waste Department |
| Materials Management | Essex | Tammy Morgan | Lake Placid High School |
| Materials Management | Essex | Victor Putman | Greater Adirondack Resource Conservation and Development Council, Inc |
| Materials Management | Franklin | Jill Wood | Franklin Country Solid Waste |
| Materials Management | Hamilton | Tracy Eldridge | Hamilton County |
| Materials Management | Jefferson, Lewis, and St. Lawrence Region 6 | Jennifer Lauzon | Department of Environmental Conservation |
| Materials Management | Jefferson | Eugene Hayes | City of Watertown |
| Materials Management | Jefferson | Jim Lawrence | Jefferson County Recycling |
| Materials Management | Jefferson | Richard LeClerc | DANC |
| Materials Management | Lewis | Sue Lyndaker | Lewis County Solid Waste |
| Materials Management | Regional | Richard Gast | Cornell Cooperative Extension |
| Materials Management | Regional | William Meyers | Casella Waste Management |
| Materials Management | St Lawrence | Scott Thornhill | St. Lawrence Co Solid Waste Dept |
| Materials Management | Regional | Rich Straut | Barton and Loguidice |
| Water Management | Lewis | Nichelle Billhardt | Lewis County SWCD |
| Water Management | Essex | Allison Buckley | Adirondack Council |
| Water Management | Jefferson | Kris Dimmick | Bernier Carr and Associates |

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Working Group Member List

| Working Group | County | Name | Employer/Affiliation |
|-------------------------|---------------|-------------------|---|
| Water Management | Clinton | Fred Dunlap | NY Department of Environmental Conservation |
| Water Management | Regional | Diane Fish | Adirondack Council |
| Water Management | Clinton | Nate Grue | Clinton Co SWCD |
| Water Management | St Lawrence | Bill Henninger | Village of Potsdam |
| Water Management | Franklin | Eric Holmlund | Paul Smiths College |
| Water Management | St Lawrence | Dawn Howard | St. Lawrence County |
| Water Management | Clinton | John Kanoza | Clinton Co Department of Health |
| Water Management | Franklin | Dan Kelting | Paul Smiths College |
| Water Management | Regional | Bill Lupo | Department of Environmental Conservation |
| Water Management | Hamilton | Elizabeth Mangle | Hamilton Co SWCD |
| Water Management | Franklin | Chastity Miller | Franklin Co SWCD |
| Water Management | Essex | Corrie Miller | Ausable River Association |
| Water Management | Jefferson | Bryon Perry | Development Authority of the North Country |
| Water Management | Regional | Vic Putman | Greater Adirondack RC&D Council |
| Water Management | Essex | David Reckahn | Essex County |
| Water Management | Essex | Debbie Rice | |
| Water Management | Jefferson | Michael Sligar | City of Watertown |
| Water Management | Regional | Rich Straut | Barton and Loguidice |
| Water Management | Jefferson | Brian Wohnsiedler | Jefferson County Soil and Water Conservation District |

B Summary of Baseline Data

| Greenhouse Gas Baseline Summary | | | | | |
|--|---|--|---------------|---------------|---------------|
| Goal | Indicator | Current Value | Target – 2020 | Target – 2035 | Target – 2050 |
| 1. Reduce Greenhouse gas emissions by source | <p>Total CO2e emitted, (metric tons [MT], and MT per capita)</p> <p>*refer to: E & E 2012 North Country Greenhouse Gas Inventory, Prepared for NYSERDA, for calculations.</p> <p>Source: 2010b. NYSDEC. New York State Climate Action Plan Interim Report. 2010. Web. 9 Nov 2010. <http://www.dec.ny.gov/energy/80930.html></p> | <p>254 MT tons CO2e</p> <p>15.5 MT CO2e per person</p> | | | Reduce by 80% |

| Energy Baseline Summary | | | | | |
|---|--|----------------------|--|--|--|
| Goal | Indicator | Current Value | Target – 2020 | Target – 2035 | Target – 2050 |
| 1. Increase the local generation and distribution of renewable energy | <p>1. Number of public buildings that have installed a renewable thermal energy (heat) fuel source to replace or supplement fossil fuel use.</p> <p>2. Kilowatt-hours of electricity produced from renewable energy and percentage of total electricity generated in the region.</p> <p>Calculation: \sum (capacity of all renewable energy sources) = Hydro Capacity+ Solar PV Capacity + Solar Thermal Capacity + Wind Turbine Capacity + Capacity of Other Renewable Sources</p> | <p>12</p> <p>94%</p> | <p>Increase to 20% of building stock</p> <p>Increase Class 2 and Class 3 renewable electricity generation to 45%</p> | <p>Increase to 35% of building stock</p> <p>Increase Class 2 and Class 3 renewable electricity generation to 55%</p> | <p>Increase to 50% of building stock</p> <p>Increase Class 2 and Class 3 renewable electricity generation to 60%</p> |

| Energy Baseline Summary | | | | | |
|--|---|--|--|--|---|
| Goal | Indicator | Current Value | Target – 2020 | Target – 2035 | Target – 2050 |
| | <p>Sources:</p> <ol style="list-style-type: none"> 1. NYSDEC, <i>New York State Facilities using low-grade/underutilized timber products and wood residue products; Biomass Energy Resource Center; regional stakeholder input.</i> 2. <i>The New York State Renewable Portfolio Standard Performance Report, NYSERDA, December 2011.</i> | | | | |
| Increase energy efficiency of the region’s building stock | <ol style="list-style-type: none"> 1. Existing buildings enrolled in an energy efficiency program (e.g., Energy Star). 2. Number of NYSERDA Energy Efficiency Funded Program Projects, and annual kWh savings. (Targets beyond 2020 will be re-evaluated based on 2020 progress and available programs) 3. New construction built to LEED or similar energy efficiency standards. <p>No calculation needed for these indicators. Count only. Data sources provided.</p> <p>Sources:</p> <ol style="list-style-type: none"> 1. <i>EnergyStar. Data retrieved on January 16, 2013 from: http://www.energystar.gov/index.cfm?function=labeled_buildings.locator</i> 2. <i>NYSERDA Program Participation2010-11.xlsx, file provided by NYSERDA</i> 3. <i>United States Green Building Council. Retrieved on January 17, 2013 from: http://new.usgbc.org/projects</i> | <p>15</p> <p>216 projects, 68 kWh</p> <p>15 (37 are pursuing LEED)</p> | <p>Increase by 20%</p> <p>Increase kWh savings by 20%</p> <p>Increase to 25% of new building stock</p> | <p>Increase by 50%</p> <p>TBD</p> <p>Increase to 35% of new building stock</p> | <p>Increase by 100%</p> <p>TBD</p> <p>Increase to 50% of new building stock</p> |

| Energy Baseline Summary | | | | | |
|---|---|----------------------|----------------------|----------------------|----------------------|
| Goal | Indicator | Current Value | Target – 2020 | Target – 2035 | Target – 2050 |
| 3. Reduce energy use through consumer decision-making and behavioral changes | <p>Regional energy consumption per capita (MMBTu).</p> <p>Calculation: Regional energy consumption per capita = Σ (regional energy consumption) ÷ regional population Σ (regional energy consumption) = Residential Energy Consumption + Commercial Energy Consumption + Industrial Energy Consumption + Transportation Energy Consumption</p> <p><i>Source: Ecology and Environment, Inc. (E & E) 2012. North Country Greenhouse Gas Inventory. Prepared for New York State Energy Research and Development Authority (NYSERDA). Print. 2012.</i></p> | 215 MMBTu | Reduce by 20% | Reduce by 30% | Reduce by 40% |

| Livable Communities and Land Use Baseline Summary | | | | | |
|---|--|----------------------|----------------------|----------------------|----------------------|
| Goal | Indicator | Current Value | Target – 2020 | Target – 2035 | Target – 2050 |
| 1. Prevent sprawl by focusing revitalization on existing main streets and downtown areas | <p>1. Percentage of population living in areas defined as hamlets, villages, city centers, and downtown areas.</p> <p>Calculation: (Total 2010 Population in Cities, CDPs, and Villages/Total 2010 North Country Population) x 100</p> | 46.41% | 50% | 60% | 70% |

Livable Communities and Land Use Baseline Summary

| Goal | Indicator | Current Value | Target – 2020 | Target – 2035 | Target – 2050 |
|------|--|--|---|---|--|
| | <p>2. Area of developed land within region and per capita land consumption (% , acres per person).</p> <p>Calculation: Total North Country Developed Land (acres)/North Country Population, 2010</p> <p>3. Number of municipalities with Main Street Revitalization Programs.</p> <p>No calculation needed. Data sources provided.</p> <p>4. Percentage of municipalities with tax policies and incentives to encourage development in municipal centers.</p> <p>Calculation: (Total number of region’s municipalities with tax policies and incentives / total number of region’s municipalities) x 100</p> <p>Sources:</p> <ol style="list-style-type: none"> 1. U.S. Census 2010 2. U.S. Census Factfinder 3. MRLC – Multi-Resolution Land Characteristics Consortium - National Land Cover Database - http://www.mrlc.gov/ 4. New York Main Street Awards: Funding History 2004-2011 5. New York Main Street Program | <p>2.68% (0.47 acres consumed per person)</p> <p>0</p> <p>0%</p> | <p>Reduce per capita consumption by 5%</p> <p>10</p> <p>10%</p> | <p>Reduce per capita consumption by 8%</p> <p>20</p> <p>20%</p> | <p>Reduce per capita consumption by 10%</p> <p>30</p> <p>30%</p> |

| Livable Communities and Land Use Baseline Summary | | | | | |
|---|---|----------------------|----------------------|----------------------|----------------------|
| Goal | Indicator | Current Value | Target – 2020 | Target – 2035 | Target – 2050 |
| 2. Create and update comprehensive plans as a means to improve sustainable practice | <p>Municipalities with a Comprehensive Plan that has been updated within the last 5 years.</p> <p>No calculation needed. Data sources provided.</p> <p><i>Source: Land Use Planning and Regulations NYS 2008 (Appendix B and C)</i></p> | 54% | 60% | 75% | 85% |
| 3. Improve the resiliency and adaptability of communities to climate-related impacts | <p>1. The number of communities participating in FEMA's National Flood Insurance Program (NFIP) Community Rating System (CRS).</p> <p>No calculation needed. Data sources provided.</p> | 0 | 50% | 75% | 100% |
| | <p>2. The degree to which climate adaptation is discussed within the region's hazards mitigation plans and their 5-year updates.</p> <p>Calculation: % of Hazard Mitigation Plans (HMPs) that discuss specific vulnerabilities and suggest adaptation options= # of HMPs that mention adaptation / total # of completed HMPs in the region</p> <p><i>Sources:</i></p> <p>1. <i>FEMA's NFIP Community Rating System (CRS)</i></p> <p>2. <i>Stakeholder contacts (via email, phone)</i></p> | 0 | 25% | 50% | 100% |

| Livable Communities and Land Use Baseline Summary | | | | | |
|--|--|---------------------------------------|----------------------|----------------------|----------------------|
| Goal | Indicator | Current Value | Target – 2020 | Target – 2035 | Target – 2050 |
| 4. Include public health in land use planning and sustainability initiatives to encourage healthy communities | 1. Grocery stores per capita No calculation needed. Data sources provided | 0.35 per 1000 persons (121 stores) | 0.36 (124 stores) | 0.38 (131 stores) | 0.4 (138 stores) |
| | 2. Farmer's markets per capita No calculation needed. Data sources provided * Number of stores and markets are based on baseline population data. <i>Sources:</i> 1. <i>Economic Research Service (ERS), U.S. Department of Agriculture (USDA) Food Environment Atlas.</i> http://www.ers.usda.gov/data-products/food-environment-atlas/go-to-the-atlas 2. <i>USDA Economic Research Service Food Desert Locations</i> http://www.ers.usda.gov/data-products/food-desert-locator/go-to-the-locator.aspx | 0.12 per 1000 persons (41 markets) | 0.15 (51 markets) | 0.18 (61 markets) | 0.2 (68 markets) |
| 5. Develop sustainability programs in local schools and colleges | Percentage of schools with sustainability outreach and education. No calculation. Data not available. | Limited data available | 25% | 50% | 75% |

| Working Landscapes Baseline Summary | | | | | | |
|---|---|----------------------|----------------------|----------------------|----------------------|--|
| Goal | Indicator | Current Value | Target – 2020 | Target – 2035 | Target – 2050 | |
| 1. Promote development of the agricultural and forestry industries, including expansion operations and starting new operations | 1. Farm acreage and products | | | | | |
| | a. Number of farms | 4,288 | 4,500 | 4,800 | 5,000 | |
| | b. Farmland (acres) | 1,107,573 | 1,100,000 | 1,100,000 | 1,100,000 | |
| | c. Total cropland (acres) | 598,126 | 595,000 | 593,000 | 592,000 | |
| | d. Harvested cropland (acres) | 514,867 | Hold at 515,000 | Hold at 515,000 | Hold at 515,000 | |
| | e. Market value of agricultural products sold (\$) | \$596 million | \$890 million | \$1.34 billion | \$2 billion | |
| | 2. Economically productive forests | | | | | |
| | a. Privately owned forest land within Adirondack Park, including land under State Working Forest Conservation Easements (acres) | 1,724,042 | 1,720,000 | 1,718,000 | 1,716,000 | |
| | b. Timberland (i.e. available for wood production and harvest) (acres) | 4,058,333 | 4,055,000 | 4,053,000 | 4,051,000 | |
| | No calculations needed. Data sources provided | | | | | |
| | Sources: 1. Land Use/Land Cover Dataset: www.mrlc.gov/nlcd06_data.php 2. USDA National Agricultural Statistics Service Census of Agriculture, 2007 3. US Forest Service Forest Inventory and Analysis Program: http://www.fia.fs.fed.us/tools-data/default.asp | | | | | |

| Working Landscapes Baseline Summary | | | | | | |
|--|---|----------------------|----------------------|----------------------|----------------------|--|
| Goal | Indicator | Current Value | Target – 2020 | Target – 2035 | Target – 2050 | |
| 2. Increase local food and forest product processing and sales within the region | 1. Number of wood-processing facilities in the region | 40 | 50 | 60 | 70 | |
| | a. Primary | 55 | 65 | 75 | 85 | |
| | b. Secondary | | | | | |
| | 2. Number of permitted food-processing facilities in the region | | | | | |
| | a. NYS Dept. of Ag and Markets | 0 | 10 | 25 | 40 | |
| | 5A permits | 541 | 590 | 640 | 690 | |
| | 20C permits | | | | | |
| | b. USDA permitted facilities for processing meat, poultry, and eggs | 1 | 3 | 6 | 12 | |
| | No calculations needed. Data sources provided | | | | | |
| | Sources: 1. NYS Dept. of Agriculture and Markets. USDA FSIS Meat, Poultry and Egg Product Inspection Directory 2. NYSDEC Directory of Primary Wood-Using Industry in New York State, 2009. NYSDEC Directory of Secondary Wood-Using Industry in New York State, 2009. | | | | | |
| 3. Increase the use of biomass to meet the thermal energy needs of the region and beyond. | 1. Number of utility and community facilities using biomass for energy. | 16 | 30 | 70 | 90 | |
| | 2. Number of biomass manufacturing facilities in the region. | 3 | 8 | 12 | 15 | |
| | No calculations needed. Data sources provided | | | | | |
| Source: NYSDEC, New York State Facilities using low-grade/underutilized | | | | | | |

| Working Landscapes Baseline Summary | | | | | |
|---|--|---|-----------------------|---------------|---------------|
| Goal | Indicator | Current Value | Target – 2020 | Target – 2035 | Target – 2050 |
| | <i>timber products and wood residue products. Biomass Energy Resource Center (BERC). Regional stakeholder input.</i> | | | | |
| 4. Promote tourism and recreation based on the region’s natural resources while providing for the long-term maintenance of the region’s recreational resources. | <p>1. Numbers of Users of Recreational Lands by type:</p> <p>a) Hikers/climbers b) Water sports (non-motorized) c) Water (motorized) d) Snowmobiles e) Skiing (Alpine and Nordic)</p> <p>2. Conditions of recreation infrastructure (trails, skiing facilities, water-based recreation facilities) and levels of resources allocated to infrastructure improvement and upkeep.</p> <p>No calculations needed. No data sources found.</p> | <p>Not available</p> <p>Not available</p> | No Target Established | | |
| 5. Enhance forest management through increased use of best management forestry practices, encouraging third-party certifications for sustainability where applicable, and implementing invasive species prevention, and management | <p>1. Acres of forest land enrolled in forest stewardship programs of under third party certification for sustainable management.</p> <p>2. Number of professional foresters in active practice in the region.</p> <p>No calculations needed. No data sources found.</p> | <p>Not available</p> <p>Not available</p> | No Target Established | | |
| 6. Upgrade and maintain existing farming infrastructure to improve energy efficiency and reduce farm operating costs | <p>Number of farms with completed energy audits.</p> <p>No calculations needed. Data sources provided.</p> <p><i>Source: EnSave Inc. for NYSERDA</i></p> | <p>10 of 4,288</p> | <p>5%</p> | <p>20%</p> | <p>50%</p> |

| Working Landscapes Baseline Summary | | | | | |
|-------------------------------------|---|---------------|---------------|---------------|---------------|
| Goal | Indicator | Current Value | Target – 2020 | Target – 2035 | Target – 2050 |
| | <i>sponsored audits. USDA NRCS for Environmental Quality Incentives Program sponsored audits.</i> | | | | |

| Transportation Baseline Summary | | | | | |
|--|---|--|-----------------------|---------------|----------------------|
| Goal | Indicators | Current Value | Target – 2020 | Target – 2035 | Target – 2050 |
| 1. Expand and promote the use of alternatives to single-occupant vehicle travel for residents and tourists. | <p>Percentage of people commuting via walking, biking, transit, and carpooling.</p> <p>Calculation: For each mode, Percent of workers commuting by mode X = (Number of workers traveling by mode X in region ÷ Total number of workers in region) x 100</p> <p>Sources:</p> <ol style="list-style-type: none"> <i>American Community Survey (ACS) Table B08301: Means of Transportation to Work</i> <i>Clinton: 2011 American Community Survey 1-Year Estimates.</i> <i>Essex, Franklin, Hamilton, Lewis: 2006-2010 American Community Survey 5-Year Estimates.</i> <i>Jefferson, St. Lawrence: 2009-2011 American Community Survey 3-Year Estimates.</i> | 18.5% | 20% | 25% | Maintain 2035 target |
| 2. Reduce trip lengths and improve transportation and fuel efficiency | 1. Vehicle miles traveled per capita | 9,775 annually | No Target Established | | |
| | <p>Vehicle miles traveled in region ÷ Total population of region</p> <p>2. Housing and Transportation Affordability Index</p> <p>No calculation needed. Data sources</p> | 56.81% of average household income spent on housing and transportation | No Target Established | | |

| Transportation Baseline Summary | | | | | |
|---|---|--|-----------------------|---------------|---------------|
| Goal | Indicators | Current Value | Target – 2020 | Target – 2035 | Target – 2050 |
| | <p>provided.</p> <p>Sources:</p> <p>1. Center for Neighborhood Technology, http://htaindex.cnt.org/map/</p> <p>2. VMT data provided by NYSDOT, Analysis Year 2009</p> <p>3. U.S. Census 2010</p> | | | | |
| 3. Preserve and improve aging transportation infrastructure | <p>Percentage of state, local, and other bridges categorized as deficient</p> <p>Calculation: (Number of deficient bridges/ total bridges in region) x 100</p> <p>Sources:</p> <p>1. NCREDC Website</p> <p>2. Data provided by NYSDOT</p> | 37% of bridges categorized as deficient | No Target Established | | |
| 4. Concentrate freight and manufacturing development and shipping at prioritized intermodal sites to support sustainable business development. | <p>Inclusion of shipping and distribution plans and strategies in County comprehensive plans.</p> <p>No calculation needed. Data sources provided.</p> <p>Source: County Comprehensive Plans</p> | 0 of 7 Counties currently include freight strategies in their comprehensive plans. | 100% by 2050 | | |

| Water Management Baseline Summary | | | | | |
|---|--|---------------|---------------|---------------|---------------|
| Goal | Indicators | Current Value | Target – 2020 | Target – 2035 | Target – 2050 |
| 1. Maintain adequate water supply for future needs | 1. Water use per capita: Gallons per capita per day (gpcd) | | | | |
| | a. Domestic Self Supply | 75 | Maintain | Maintain | Maintain |
| | b. Public Supply | 100 | 90 | 80 | 70 |

| Water Management Baseline Summary | | | | | |
|--|--|---------------|-----------------------|-------------------|-------------------|
| Goal | Indicators | Current Value | Target – 2020 | Target – 2035 | Target – 2050 |
| | <p>Calculation 1: Water withdrawn per public supply / public supply population</p> <p>Calculation 2: Calculation: Water withdrawn per domestic self supply/ domestic self supply population</p> <p>2. Water use per sector: million gallons per day (MGD)</p> <p>a. Public Supply 38.5</p> <p>b. Domestic Self Supply 10.5</p> <p>c. Aquaculture 13.0</p> <p>d. Industrial Self Supply 11.0</p> <p>e. Livestock 5.5</p> <p>f. Irrigation 2.5</p> <p>g. Mining 2.0</p> <p>h. Thermoelectric 0.0</p> <p>No calculation needed. Data sources provided.</p> <p><i>Source: United States Geological Survey (USGS), Estimated Use of Water in the United States, County-Level Data for 2005.</i></p> | | No Target Established | | |
| 2. Promote watershed management planning on a regional or watershed scale | <p>1. Percentage of regional watersheds with a watershed management plan.</p> <p>Calculation: Number of watershed plans/ total number of watersheds</p> | 33% | 50% | 75% | 100% |
| | | | Maintain below 5% | Maintain below 5% | Maintain below 5% |

| Water Management Baseline Summary | | | | | |
|---|---|--|---|---|--|
| Goal | Indicators | Current Value | Target – 2020 | Target – 2035 | Target – 2050 |
| | <p>2. Impervious surface area (acres, %)</p> <p>Calculation: Impervious surface area / total surface area</p> <p>Sources:</p> <ol style="list-style-type: none"> 1. USDA Watershed Boundary Dataset in HUC-8, 10, and 12, 2012. ESRI 2010. 2. USGS - NLCD2006 Percent Developed Imperviousness - http://www.mrlc.gov/nlcd06_data.php. | <p>208,522, 3.6%</p> | | | |
| 3. Maintain and/or improve the quality of the region's water bodies and supply sources | <ol style="list-style-type: none"> 1. Stream biological impairments (NYSDEC) 2. Water body and stream impairments (NYSDEC 303(d) list) <p>No calculations needed. Data sources provided.</p> <p>Sources:</p> <ol style="list-style-type: none"> 1. NYSDEC Biomonitoring Program 2. NYSDEC Section 303(d) List of Impaired/TMDL Waters | <p>12%</p> <p>25.2% impaired</p> <p>52% assessed</p> | <p>Reduce by 5%</p> <p>Reduce by 5%</p> <p>Assess 60%</p> | <p>Reduce by 10%</p> <p>Reduce by 10%</p> <p>Assess 75%</p> | <p>Reduce by 25%</p> <p>Reduce by 25%</p> <p>Assess 100%</p> |
| 4. Reduce the energy used for water supply, distribution, and treatment | <p>Cost per gallon per day(gpd) treated</p> <p>a. water b. wastewater</p> <p>Sources:</p> <ol style="list-style-type: none"> 1. United States Environmental Protection Agency (USEPA) Enforcement and Compliance | <p>\$1.41 \$2.37</p> | No Target Established | | |

| Water Management Baseline Summary | | | | | |
|-----------------------------------|--|---------------|---------------|---------------|---------------|
| Goal | Indicators | Current Value | Target – 2020 | Target – 2035 | Target – 2050 |
| | <p><i>Online Database</i> http://www.epa-echo.gov/echo/compliance_report.html</p> <p><i>2. United States Geological Survey (USGS) Estimated Use of Water in the United States, County-Level Data for 2005.</i></p> <p><i>3. 2010 NYS Comptrollers Office - Annual Public Expenditures for Water and Wastewater.</i></p> | | | | |

| Materials Management Baseline Summary | | | | | |
|---|---|---------------|---------------|---------------|---------------|
| Goal | Indicator | Current Value | Target – 2020 | Target – 2035 | Target – 2050 |
| <p>1. Reduce the amount of solid waste generated</p> | <p>MSW disposal rate per capita (lbs/person/day)</p> <p>Calculation: (Total MSW generated per day – recycled material) / generating population</p> <p>Sources:</p> <p><i>1. Clinton County: Integrated Solid Waste Management Plan 2012. High disposal rate attributed to large seasonal population flux and the inclusion of C&D materials in reported MSW values.</i></p> <p><i>2. Essex County: Data not available. Estimated based on average of neighboring counties and counties of similar population density.</i></p> <p><i>3. Franklin County: Franklin County Solid Waste Management Plan 2006,</i></p> | 3.2 | 1.7 | 0.5 | 0.1 |

| Materials Management Baseline Summary | | | | | |
|---|---|----------------------|----------------------|----------------------|----------------------|
| Goal | Indicator | Current Value | Target – 2020 | Target – 2035 | Target – 2050 |
| | <p><i>Disposal and recycling data based on 2004 values.</i></p> <p>4. <i>Hamilton County: Draft Solid Waste Management Plan Update 2012. High disposal rate attributed to large seasonal population flux and the inclusion of C&D materials in reported MSW values.</i></p> <p>5. <i>Jefferson, Lewis, and St. Lawrence counties: Regional Solid Waste Management Plan 2011.</i></p> <p>6. <i>New York State: Beyond Waste, NYSDEC 2010.</i></p> | | | | |
| 2. Increase the percentage of materials recycled or reused | <p>Percent of total solid waste stream that is recycled.</p> <p>Calculation: (Total MSW + C&D generated) / (Total MSW and C&D recycled)</p> <p>Sources:</p> <p>1. <i>Clinton County: Integrated Solid Waste Management Plan 2012.</i></p> <p>2. <i>Essex County: Data not available. Estimated based on average of neighboring counties and counties of similar population density.</i></p> <p>3. <i>Franklin County: Franklin County Solid Waste Management Plan 2006, Disposal and recycling data based on 2004 values.</i></p> <p>4. <i>Hamilton County: Draft Solid Waste Management Plan</i></p> | 8% | 50% | 70% | 85% |

| Materials Management Baseline Summary | | | | | |
|--|--|----------------------|----------------------|----------------------|----------------------|
| Goal | Indicator | Current Value | Target – 2020 | Target – 2035 | Target – 2050 |
| | <i>Update 2012. 5. Jefferson, Lewis, and St. Lawrence counties: Regional Solid Waste Management Plan 2011. 6. New York State: Beyond Waste, NYSDEC 2010.</i> | | | | |

C Greenhouse Gas Inventory Template

Cover Sheet

NYSERDA

Cleaner Greener Communities / Climate Smart Communities Regional Level GHG Reporting Template

Instructions

Please use this template to report summary regional GHG inventories to NYSERDA as part of your final deliverables for the regional GHG inventory. Fill it out and rename the sheet "**REDC_NAME.CGC Final GHG Inventory.2010.xls**".

In this template there are two tabs, "Emissions by Source" and the "Roll Up Report". Emissions by Source shows all direct and indirect emissions sources considered by the GHG Working Group for inclusion in the inventory, and the Roll Up Report reflects the consensus decision for which sources are to be included when totaling the regions GHG inventory into a single number. The final submission should have the two tabs for the REDC in total, and two additional tabs for each county separately. For county tab names, please rename "REDC" to the name of the county.

We understand each region will have its own custom way of managing data and calculations so please cut and paste summary results from your own data sheets into this template. Although you may create dynamic links to this template from your analysis sheets when filling it out, please submit this template without these links.

Protocol Compliance Statements. In the REDC level tabs only, please fill in Columns P through R, and indicate if your methods adhered to methods in Column O that summarize NY GHG Working Group consensus decisions with "Rec" standing for the recommended methods and "Alt" standing for an acceptable alternative methods. It is not required that all methods adhere to the recommended or alternate methods, but please indicate any deviations, justifications, findings, or recommendations you have for additional methods to consider. It may help you to select Columns O-P and choose the "wrap text" format to help you read the methods.

Please Fill in the Summary Table on the Cover Sheet tab to the right at the conclusion of filling out these data sheets. You may dynamically link these numbers to the other sheets in this template.

Color Coding- in general a Green cell requires a value or entry, a white cell is optional.

| | |
|------------------|---------------|
| Reporting Region | North Country |
|------------------|---------------|

| REDC Emissions Summary, by County | Roll Up Numbers, | MTCO ₂ e per | |
|---------------------------------------|------------------------------|-------------------------|--------------|
| | MTCDE (MT CO ₂ e) | Population | capita |
| Clinton | 1,179,287 | 82,128 | 14.36 |
| Essex | 868,508 | 39,370 | 22.06 |
| Franklin | 604,809 | 51,599 | 11.72 |
| Hamilton | 178,906 | 4,836 | 36.99 |
| Jefferson | 1,537,205 | 116,229 | 13.23 |
| Lewis | 606,948 | 27,087 | 22.41 |
| St. Lawrence | 1,747,699 | 111,944 | 15.61 |
| REDC in Total (w/out aircraft) | 6,723,362 | 433,193 | 15.52 |
| REDC in Total (w/out aircraft) | 6,723,362 | 433,193 | 15.52 |
| REDC in Total (w/ aircraft) | 6,734,758 | 433,193 | 15.55 |

REDC Emissions By Source

REDC Emissions By Source and Sector
Year: 2010

REDC / County Name **North Country**

Color Code

REQUIRED, though some data may be zero or considered to small to count
 OPTIONAL
 DO NOT Report Data in these cells

| DRAFT Reporting Template CGC. Emissions in MTCDE | | | | | Rolled Up? | Related GHG Metrics / Activity Data | | |
|--|--|---------------------------------------|---------|---------|------------|-------------------------------------|--------|-----------|
| | | Scope 1 | Scope 2 | Scope 3 | | Biogenic | Metric | Unit |
| Built Environment | | Residential Energy Consumption | | | | | | |
| NC Electricity Consumption | Electricity / Steam | | 325,724 | | | Consumption | MMBTU | 4,896,765 |
| NC Direct Residential Fuel Consumption | Natural Gas | 290,410 | | | | Consumption | MMBTU | 5,471,996 |
| NC Direct Residential Fuel Consumption | Propane / LPG | 103,286 | | | | Consumption | MMBTU | 1,428,293 |
| NC Direct Residential Fuel Consumption | Distillate Fuel Oil (#1, #2, Kerosene) | 432,290 | | | | Consumption | MMBTU | 5,825,306 |
| NC Direct Residential Fuel Consumption | Wood | 16,477 | | | 323,887 | Consumption | MMBTU | 8,347,161 |
| | | Commercial Energy Consumption | | | | | | |
| NC Electricity Consumption | Electricity / Steam | | 178,964 | | | Consumption | MMBTU | 2,690,450 |
| NC Commercial Direct Fuel Consumption | Natural Gas | 204,913 | | | | Consumption | MMBTU | 3,861,032 |
| NC Commercial Direct Fuel Consumption | Propane / LPG | 40,396 | | | | Consumption | MMBTU | 638,891 |
| NC Commercial Direct Fuel Consumption | Distillate Fuel Oil (#1, #2, Kerosene) | 395,820 | | | | Consumption | MMBTU | 5,333,853 |
| NC Commercial Direct Fuel Consumption | Residual Fuel Oil (#4 and #6) | | | | | Consumption | MMBTU | |
| NC Commercial Direct Fuel Consumption | Coal | 357 | | | | Consumption | MMBTU | 3,478 |
| NC Commercial Direct Fuel Consumption | Wood | 6,474 | | | 307,647 | Consumption | MMBTU | 3,279,824 |
| | | Industrial Energy Consumption | | | | | | |
| NC Electricity Consumption | Electricity / Steam | | 269,206 | | | Consumption | MMBTU | 4,047,096 |
| NC Industrial Title V Consumption | Natural Gas | 186,750 | | | | Consumption | MMBTU | 3,518,810 |
| NC Industrial Title V Consumption | Propane / LPG | 1,701 | | | | Consumption | MMBTU | 26,909 |
| NC Industrial Title V Consumption | Distillate Fuel Oil (#1, #2, Kerosene) | 1,285 | | | | Consumption | MMBTU | 17,318 |
| NC Industrial Title V Consumption | Residual Fuel Oil (#4 and #6) | 262,255 | | | | Consumption | MMBTU | 3,480,538 |
| NC Industrial Title V Consumption | Coal | | | | | Consumption | MMBTU | |

REDC Emissions By Source and Sector
Year: 2010

REDC / County Name: **North Country**

Color Code

| | |
|--|--|
| | REQUIRED, though some data may be zero or considered to small to count |
| | OPTIONAL |
| | DO NOT Report Data in these cells |

| DRAFT Reporting Template CGC. Emissions in MTCDE | | | | | Rolled Up? | Related GHG Metrics / Activity Data | | |
|--|---|-----------|---------|---------|------------|-------------------------------------|--------|------------|
| | | Scope 1 | Scope 2 | Scope 3 | | Biogenic | Metric | Unit |
| NC Industrial Title V Consumption | Wood | 1,928 | | | 91,613 | Consumption | MMBTU | 976,685 |
| Energy Generation and Supply | Energy Generation and Supply | | | | | | | |
| NC Elec Generation GHG Analysis | Coal and Coke | 106,709 | | | | Consumption | MMBTU | 1,111,229 |
| NC Elec Generation GHG Analysis | Natural Gas | 214,993 | | | | Consumption | MMBTU | 4,050,971 |
| NC Elec Generation GHG Analysis | Distillate Fuel Oil (#1, #2 and #4) | 954 | | | | Consumption | MMBTU | 12,861 |
| NC Elec Generation GHG Analysis | Residual Fuel Oil (#4 and #6) | 81,846 | | | | Consumption | MMBTU | 1,086,225 |
| NC Elec Generation GHG Analysis | Wood / Biomass | 7,106 | | | 337,659 | Consumption | MMBTU | 3,599,772 |
| NC Elec Generation GHG Analysis | MSW and landfill emissions | 223 | | | 44,300 | MSW Combusted | MMBTU | 850,779 |
| NC Elec Generation GHG Analysis | Other | 2,978 | | | | | | 33,859 |
| NC Elec Generation GHG Analysis | Electricity T/D Losses | | 45,041 | | | Losses | MMBTU | 677,117 |
| NC Elec Generation GHG Analysis and NC Direct Fuel Consumption | Natural Gas T/D Losses | 126,913 | | | | Losses | MMBTU | |
| NC Electricity Consumption | Use of SF6 in the Utility Industry | 10,359 | | | | Consumption | MMBTU | |
| Industrial Processes | Industrial Processes | | | | | | | |
| Not Reported | Cement Production | | | | | Yes | | |
| NC Industrial Sources | Iron and Steel Production | | | | | Yes | | |
| NC Industrial Sources | Ferroalloy Production | | | | | Yes | | |
| Not Reported | Aluminum Production | 234,165 | | | | Yes | | |
| Not Reported | Paper and Pulp | 33,205 | | | | Yes | | |
| Not Reported | Limestone Use | | | | | Yes | | |
| Not Reported | Soda Ash Use | | | | | Yes | | |
| Not Reported | Semi-Conductor Manufacturing | | | | | Yes | | |
| Not Reported | Glass Production | | | | | Yes | | |
| Not Reported | Chemical Manufacturing | | | | | Yes | | |
| Product Use (Ozone Depleting Substances) | Product Use (Ozone Depleting Substances) | | | | | | | |
| NC Industrial Sources | All Refrigerants- except SF6 | 99,181 | | | | Yes | | |
| Transportation Energy | On-road | | | | | | | |
| NC Emission Summary - Onroad | Motor Gasoline (E-10) | 1,545,164 | | | 112,144 | Consumption | MMBTU | 23,564,075 |
| NC Emission Summary - Onroad | Diesel | 421,448 | | | | Consumption | MMBTU | 5,679,245 |

| Protocol Compliance Report | | | | |
|--|--|-----------|----|--|
| | Summary of Protocol Decisions for Required Tier II Source (Green Box Sources) "Rec" - recommended, "Alt" means acceptable alternative | Adherence | | Brief Description of Method and Issues |
| | | Yes | No | |
| Built Environment | | | | |
| NC Electricity Consumption | (Rec) - Utility Supplied Data, (Alt 1) - extrapolation from partial set, (Alt 2) EIA allocation based HDD and Housing Unit Size | X | | Actual electricity sales data is provided by National Grid, NYSEG, and municipal utilities. |
| NC Direct Residential Fuel Consumption | (Rec) - Utility Supplied Data, (Alt 1) - extrapolation from partial set, (Alt 2) EIA allocation based HDD and Housing Unit Size | X | | As stated |
| NC Direct Residential Fuel Consumption | (Rec) Allocated EIA SEDS residential state consumption to counties based on Home Heating Fuel, HDD, and Housing Unit Size | | | As stated |
| NC Direct Residential Fuel Consumption | (Rec) Allocated EIA SEDS residential state consumption to counties based on Home Heating Fuel, HDD, and Housing Unit Size | | | As stated |
| NC Direct Residential Fuel Consumption | (Rec) Allocated EIA SEDS residential state consumption to counties based on Home Heating Fuel, HDD, and Housing Unit Size | | | |
| NC Electricity Consumption | (Rec) - Utility Supplied Data, (Alt 1) - extrapolation from partial set, (Alt 2) EIA allocation based on Fuel Oil Recommended method. | X | | Actual electricity sales data is provided by National Grid, NYSEG, and municipal utilities. |
| NC Commercial Direct Fuel Consumption | (Rec) - Utility Supplied Data, (Alt 1) - extrapolation from partial set, (Alt 2) EIA allocation based on Fuel Oil Recommended method. | X | | As stated |
| NC Commercial Direct Fuel Consumption | (Rec) Allocated EIA SEDS commercial state consumption to counties based on Home Heating Fuel, HDD, employment and Commercial Square Footage. (Alt) Allocation based on Home Heating, HDD, and Employment only. | X | | As stated |
| NC Commercial Direct Fuel Consumption | (Rec) Allocated EIA SEDS commercial state consumption to counties based on Home Heating Fuel, HDD, employment and Commercial Square Footage. (Alt) Allocation based on Home Heating, HDD, and Employment only. | X | | As stated |
| NC Commercial Direct Fuel Consumption | (Rec) Allocated EIA SEDS commercial state consumption to counties based on Home Heating Fuel, HDD, employment and Commercial Square Footage. (Alt) Allocation based on Home Heating, HDD, and Employment only. | X | | As stated |
| NC Commercial Direct Fuel Consumption | (Rec) Allocated EIA SEDS commercial state consumption to counties based on Home Heating Fuel, HDD, employment and Commercial Square Footage. (Alt) Allocation based on Home Heating, HDD, and Employment only. | X | | As stated |
| NC Commercial Direct Fuel Consumption | (Rec) Allocated EIA SEDS commercial state consumption to counties based on Home Heating Fuel, HDD, employment and Commercial Square Footage. (Alt) Allocation based on Home Heating, HDD, and Employment only. | X | | As stated |
| NC Electricity Consumption | (Rec) - Utility Supplied Data, (Alt 1) - extrapolation from partial set, (Alt 2) allocate SEDS EIA data based allocated by industrial employment | X | | Actual electricity sales data is provided by National Grid, NYSEG, and municipal utilities. |
| NC Industrial Title V Consumption | (Rec) - Pie Slice Method. (1) Allocate directly all Title 5 / MMR reporting industrial facilities to the counties / municipalities. (2) compute total statewide industrial fuel use for all Title 5 / EPA MMR reporting facilities and subtract that from the EIA SEDS reported fuel use for the industrial sector (3) allocate the balance from step 2 to counties by industrial employment for manufacturing. The balance is assumed to represent smaller industry that does not report under Title 5 regulations. | | X | |
| NC Industrial Title V Consumption | (Rec) - Pie Slice Method. (1) Allocate directly all Title 5 / MMR reporting industrial facilities to the counties / municipalities. (2) compute total statewide industrial fuel use for all Title 5 / EPA MMR reporting facilities and subtract that from the EIA SEDS reported fuel use for the industrial sector (3) allocate the balance from step 2 to counties by industrial employment for manufacturing. The balance is assumed to represent smaller industry that does not report under Title 5 regulations. | | X | |
| NC Industrial Title V Consumption | (Rec) - Pie Slice Method. (1) Allocate directly all Title 5 / MMR reporting industrial facilities to the counties / municipalities. (2) compute total statewide industrial fuel use for all Title 5 / EPA MMR reporting facilities and subtract that from the EIA SEDS reported fuel use for the industrial sector (3) allocate the balance from step 2 to counties by industrial employment for manufacturing. The balance is assumed to represent smaller industry that does not report under Title 5 regulations. | | X | Direct energy use as reported for Title 5 industrial facilities only, additional allocation based on statewide emissions by industrial employees is not representative of the region, therefore not included |
| NC Industrial Title V Consumption | (Rec) - Pie Slice Method. (1) Allocate directly all Title 5 / MMR reporting industrial facilities to the counties / municipalities. (2) compute total statewide industrial fuel use for all Title 5 / EPA MMR reporting facilities and subtract that from the EIA SEDS reported fuel use for the industrial sector (3) allocate the balance from step 2 to counties by industrial employment for manufacturing. The balance is assumed to represent smaller industry that does not report under Title 5 regulations. | | X | |
| NC Industrial Title V Consumption | (Rec) - Pie Slice Method. (1) Allocate directly all Title 5 / MMR reporting industrial facilities to the counties / municipalities. (2) compute total statewide industrial fuel use for all Title 5 / EPA MMR reporting facilities and subtract that from the EIA SEDS reported fuel use for the industrial sector (3) allocate the balance from step 2 to counties by industrial employment for manufacturing. The balance is assumed to represent smaller industry that does not report under Title 5 regulations. | | X | |

| Protocol Compliance Report | | | |
|--|--|-----------|--|
| | Summary of Protocol Decisions for Required Tier II Source (Green Box Sources) "Rec" - recommended, "Alt" means acceptable alternative | Adherence | |
| NC Industrial Title V Consumption Energy Generation and Supply | (Rec) - Pie Slice Method. (1) Allocate directly all Title 5 / MMR reporting industrial facilities to the counties / municipalities. (2) compute total statewide industrial fuel use for all Title 5 / EPA MMR reporting facilities and subtract that from the EIA SEDS reported fuel use for the industrial sector (3) allocate the balance from step 2 to counties by industrial employment for manufacturing. The balance is assumed to represent smaller industry that does not report under Title 5 regulations. | | X |
| NC Elec Generation GHG Analysis | (Rec) - Direct Allocation from Title 5, MMR, or EIA 923 Database. All Grid Connected Power Generators with Nameplate capacity of 1 MW or greater shall be reported. For overlap, prioritize EIA 923 Database. | X | EIA 923 database used |
| NC Elec Generation GHG Analysis | (Rec) - Direct Allocation from Title 5, MMR, or EIA 923 Database. All Grid Connected Power Generators with Nameplate capacity of 1 MW or greater shall be reported. For overlap, prioritize EIA 923 Database. | X | EIA 923 database used |
| NC Elec Generation GHG Analysis | (Rec) - Direct Allocation from Title 5, MMR, or EIA 923 Database. All Grid Connected Power Generators with Nameplate capacity of 1 MW or greater shall be reported. For overlap, prioritize EIA 923 Database. | X | EIA 923 database used |
| NC Elec Generation GHG Analysis | (Rec) - Direct Allocation from Title 5, MMR, or EIA 923 Database. All Grid Connected Power Generators with Nameplate capacity of 1 MW or greater shall be reported. Wood CO2 emissions reported optionally as biogenic CO2, CH4 and N2 Emissions required to be reported to Scope 1 | X | EIA 923 database used |
| NC Elec Generation GHG Analysis | (Rec) - Direct Allocation from Title 5, MMR, or EIA 923 Database. All Grid Connected Power Generators with Nameplate capacity of 1 MW or greater shall be reported. MSW CO2 emissions split as 44% reported as Scope 1 as part of non-biogenic (plastics etc), and 56% can be reported as option biogenic based data for 2005 on http://www.eia.gov/cneaf/solar.renewables/page/mswaste/msw_report.html . All CH4 and N2O shall be reported under required Scope 1. | X | EIA 923 database used |
| NC Elec Generation GHG Analysis | (Rec) - Acquire utility specific estimate of T/D (in %) and apply that to all consumption (res/commercial/industrial). Report emissions as Scope 2 using regional EGRID emission factors consistent with all Scope 2 calculations. (Alt) use a statewide average T/D loss of 5.28% as documented by EPA's EGRID reporting for New York. | X | Alternative Method As stated |
| NC Elec Generation GHG Analysis and NC Direct Fuel Consumption | (Rec) - Acquire utility specific estimate of T/D (in %), compute as percentage of total residential/commercial/industrial/energy generation. Report as Scope 1 CH4 emissions. (Alt) use a statewide average of 1.8% as documented by National Grid in 2010 PSC Reporting. | | |
| NC Electricity Consumption | (Rec) - acquire utility specific estimate and report as SF6. (Alt) Apportion NYSERDA 2009 Emission Inventory Total for the state to counties based ration of EIA reported total electricity demand to computed regional or county demand for all sectors. | | X Based on conversations with P Groth and J Yienger, used national 2010 emission inventory total |
| Industrial Processes | | | |
| Not Reported | | X | Nothing to report |
| NC Industrial Sources | | X | Nothing to report |
| NC Industrial Sources | | X | Nothing to report |
| Not Reported | | X | As stated |
| Not Reported | | X | As stated |
| Not Reported | (Rec) Direct Allocation from from EPA MMR only. Small Sources to not to be included at this time. | X | Nothing to report |
| Not Reported | | X | Nothing to report |
| Not Reported | | X | Nothing to report |
| Not Reported | | X | Nothing to report |
| Not Reported | | X | Nothing to report |
| Product Use (Ozone Depleting Substances) | | | |
| NC Industrial Sources | (Rec) Use EPA 2009 Draft Guidance method. Allocate national per/capita emissions to counties based on population. Methods include mobile refrigeration | X | As stated |
| Transportation Energy | | | |
| NC Emission Summary - Onroad | (Rec) Use MPO-provided VMT data local to your region, supplemented by DOT provided data (on Wiggio). Use regional-specific data on fleet profile and national fleet fuel economy data (on Wiggio) to estimate county-level GHG emissions. (Alt) Use EPA MOVES GHG module customized for your region- appropriate if you are running this model. Assume on-road fuel is 10% ethanol and report this fraction as Optional biogenic emissions. | X | As stated |
| NC Emission Summary - Onroad | (Rec) Use MPO-provided VMT data local to your region, supplemented by DOT provided data (on Wiggio). Use regional-specific data on fleet profile and national fleet fuel economy data (on Wiggio) to estimate county-level GHG emissions. (Alt) Use EPA MOVES GHG module customized for your region- appropriate if you are running this model. Assume on-road fuel is 10% ethanol and report this fraction as Optional biogenic emissions on the ethanol line item. | X | As stated |

| Protocol Compliance Report | | | |
|---------------------------------|---|-----------|---|
| | Summary of Protocol Decisions for Required Tier II Source (Green Box Sources) "Rec" - recommended, "Alt" means acceptable alternative | Adherence | |
| Not Reported | Optional- Include regional E-85 consumption if you have it, and debit against your gasoline estimate create using VMT. Allocate 15% as gasoline to be reported as Scope 1, and 85% as ethanol to be reported as optional biogenic. | X | Not available |
| Not Reported | Optional- Include regional biodiesel consumption if you have it, and debit against your diesel estimate create using VMT. Because biodiesel blends change, allocate option biogenic component on this line item only, and retain the diesel fraction on the diesel line item. | X | Not available |
| Not Reported | Today this will be zero, but as NYSERDA pushes to electrify on-road transportation we will want to report here, debiting against electricity consumption in the other sectors as appropriate. | X | Not available |
| NC Emission Summary - Rail | Freight and Passenger. (Rec) Use direct provider fuel consumption data allocated spatially to location of routes (Alt) Use Nyserda 2002 estimates of Diesel consumption by county directly. | X | As stated |
| NC Emission Summary - Rail | Passenger and Commuter (Rec) Use direct provider electricity consumption data allocated spatially to location of routes (Alt) None identified. | X | Not applicable |
| NC Emission Summary -Com Marine | | X | As stated, except recreational boating included in non-road data |
| NC Emission Summary -Com Marine | Rec - USE NYSDEC 2007 data from the state emission inventory for the small and pleasure craft categories reported by county (data on Wiggiio). For commercial distillate and bunkers, No consensus method identified- please document methods used. | X | As stated, except recreational boating included in non-road data |
| NC Emission Summary -Com Marine | | X | As stated, except recreational boating included in non-road data |
| NC Emission Summary-Aircraft | Optional Scope 1- Estimate Landing and Take off Cycle emissions using a dispersion model such as EDMS, or with related data from the NYSDEC for the 2007 state emission inventory. Optional Scope 3, use FAA statistics on departure miles from regional airport, allocate jet fuel use to it, then allocate to counties by fraction of population served | X | Scope 1 option, using EDMS. Total added to roll up totals discussed within Sustainability Plan |
| NC Emission Summary-Nonroad | Rec - USE NYSDEC 2007 NONROAD data from the state emission inventory (data on Wiggiio) for all categories except small marine. | X | As stated, but includes recreational marine |
| Waste Management | | | |
| NC Waste | This is fugitive CH4 emissions from landfills. There are two required Scopes. Scope 1 - Estimate of actual emissions in regional boundary. (rec) use MMR or Title 5 (annual landfill reporting) data directly for facilities (data on Wiggiio). For recently closed landfills or for areas without reported data, use a First Order Decay model to estimate emissions. Scope 3- emissions footprint attributed to current waste generation regardless of where it is treated. (rec) Estimate county level MSW and C/D waste generation and apply a representative FOD model with prevailing CH4 captures rates forward-casted 50 years to estimate the footprint. | X | Actual 2010 treatment emissions reported, allocated to counties in region based on average tonnage per capita |
| Not Reported | Rec - for any MSW incinerated that does not generate grid connected power, compute emissions. MSW CO2 emissions split. 44% shall be reported as Scope 1 as part of non-biogenic (plastics etc), and 56% can be reported as option biogenic based data for 2005 on http://www.eia.gov/cneaf/solar.renewables/page/mwaste/msw_report.html . All Ch4 and N2O shall be reported under required Scope 1 | X | Not reported, no non-grid incinerators reported in DEC data. |
| NC Waste water | Determine population covered by WWTPs. (Rec)- Use the ICLEI Local Government Operations Protocol and apply to all facilities in the region. (Alt) use methods as described in the EPA 2009 Draft GHG guidance to translate populations served into emissions using default data. Determine population covered by Septic Systems, and apply the default emissions / capita as described in the ICLEI Local Government Operations Protocol. | X | Based on conversations with P. Groth and J. Yienger, used State Inventory Tool and regional population, allocated to county by population |
| Agriculture | | | |
| GHG_NC_Agriculture | (Rec) Methods as described in the EPA 2009 guidance and executed in the EPA's State Inventory Tool. Use locally resolved fertilizer, crop, and livestock population from either the 2007 Ag census or the US NASS system to get county-level data and make calculations for each county. | X | As stated |
| GHG_NC_Agriculture | | X | As stated |
| GHG_NC_Agriculture | | X | As stated |
| Not Reported | | X | None reported |
| Land Use and Forestry | | | |
| GHG_NC_Forest | Optional Source and Sink. Use methods described in the EPA 2009 Guidance. Use local forest inventory data, or use the US Forest Services online inventory tool for forests. For carbon stock factors use the National Council for Air and Stream Improvement's Carbon On-Line Estimator. | X | As stated |
| GHG_NC_Forest | (NCASI 2008) Use the | X | Total reported for information, change is not relevant to WG discussions |
| Grand Totals | Sum Totals in columns for all EXCEPT ANY FORESTRY SINKS. Totals in the Scope 1 column can be a considered a physical roll up of emissions that occur in boundary, and is analogous to reporting that is done for state and federal GHG inventories, and for air quality management. Value above MINUS and reported optional forestry sinks. | | |

REDC Roll Up Report

REDC GHG Emissions Roll Up Report

Year: 2010

(all emissions in Column D, when summed will equal the total County or REDC protocol compliant GHG emissions estimate)

REDC / County Name **North Country**

Color Code

Green REQUIRED for the Roll Up Report, though some data may be zero, N/A, or considered to small to count
Grey Report NO Data in cell

| DRAFT Roll Up Report CGC. Emissions in MTCDE | | | | | | | |
|--|--|---------|---------|---------|--------|-----|--------|
| | | CO2e | CO2 | CH4 | N2O | PFC | SF6 |
| Built Environment | Residential Energy Consumption | | | | | | |
| | Electricity / Steam | 325,724 | 324,140 | 218 | 1,366 | | |
| | Natural Gas | 290,410 | 290,125 | 115 | 170 | | |
| | Propane / LPG | 103,286 | 102,880 | 103 | 304 | | |
| | Distillate Fuel Oil (#1, #2, Kerosene) | 432,290 | 430,840 | 367 | 1,084 | | |
| | Wood | 16,477 | - | 5,609 | 10,868 | | |
| | Commercial Energy Consumption | | | | | | |
| | Electricity / Steam | 178,964 | 178,094 | 120 | 751 | | |
| | Natural Gas | 204,913 | 204,712 | 81 | 120 | | |
| | Propane / LPG | 40,396 | 40,237 | 40 | 119 | | |
| | Distillate Fuel Oil (#1, #2, Kerosene) | 395,820 | 394,492 | 336 | 992 | | |
| | Residual Fuel Oil (#4 and #6) | - | | | | | |
| | Coal | 357 | 355 | 1 | 2 | | |
| | Wood | 6,474 | - | 2,204 | 4,270 | | |
| | Industrial Energy Consumption | | | | | | |
| | Electricity / Steam | 269,206 | 267,897 | 180 | 1,129 | | |
| | Natural Gas | 186,750 | 186,567 | 74 | 109 | | |
| | Propane / LPG | 1,701 | 1,695 | 2 | 5 | | |
| | Distillate Fuel Oil (#1, #2, Kerosene) | 1,285 | 1,281 | 1 | 3 | | |
| | Residual Fuel Oil (#4 and #6) | 262,255 | 261,388 | 219 | 647 | | |
| | Coal | - | | | | | |
| | Wood | 1,928 | | 656 | 1,272 | | |
| | Energy Generation and Supply | | | | | | |
| | Electricity T/D Losses | 45,041 | 44,822 | 30 | 189 | | |
| | Natural Gas T/D Losses | 126,913 | | 126,913 | | | |
| | Use of SF6 in the Utility Industry | 10,359 | | | | | 10,359 |
| | Industrial Processes | | | | | | |
| | Cement Production | - | | | | | |

REDC GHG Emissions Roll Up Report

Year: 2010

(all emissions in Column D, when summed will equal the total County or REDC protocol compliant GHG emissions estimate)

REDC / County Name **North Country**

Color Code

REQUIRED for the Roll Up Report, though some data may be zero, N/A, or considered to small to count
 Report NO Data in cell

| DRAFT Roll Up Report CGC. Emissions in MTCDE | | | | | | | | |
|--|--|------------------|------------------|----------------|---------------|---------------|---------------|---------------|
| | | CO2e | CO2 | CH4 | N2O | PFC | HFC | SF6 |
| Iron and Steel Production | Iron and Steel Production | - | | | | | | |
| | Ferroalloy Production | - | | | | | | |
| | Aluminum Production | 234,165 | 211,169 | | | 22,996 | | |
| | Paper and Pulp | 33,205 | | | | | | |
| | Limestone Use | - | | | | | | |
| | Soda Ash Use | - | | | | | | |
| | Semi-Conductor Manufacturing | - | | | | | | |
| | Chemical Manufacturing | - | | | | | | |
| | Product Use (ODS Substitutes) | - | | | | | | |
| | All Refrigerants- except utility SF6 | 99,181 | | | | | | 99,181 |
| Transportation Energy | On-road: ALL(Total not ethanol) | | | | | | | |
| | Motor Gasoline (E-10) | 1,545,164 | 1,539,705 | 4,078 | 1,381 | | | |
| | Diesel | 421,448 | 420,037 | 1,053 | 358 | | | |
| | Ethanol | - | | | | | | |
| | Biodiesel | - | | | | | | |
| | Rail | | | | | | | |
| | Diesel | 71,649 | 71,409 | 180 | 61 | | | |
| | Electricity Consumption | - | | | | | | |
| | Marine | | | | | | | |
| | Gasoline | - | | | | | | |
| | Distillate | 28,744 | 28,647 | 72 | 24 | | | |
| | Residual Fuel Oil | 27,070 | 26,981 | 67 | 23 | | | |
| | Off-road Mobile | | | | | | | |
| | All Fuels (Diesel and Gasoline) | 566,620 | 564,649 | 1,472 | 499 | | | |
| Waste Management | Solid Waste Management | | | | | | | |
| | Landfill Methane and Combustion | 97,305 | 134 | 97,170 | 0 | | | |
| | MSW incineration (non grid connected) | - | | | | | | |
| | Sewage Treatment | | | | | | | |
| Central WWTPs and Septic Systems | 40,000 | | 30,000 | 10,000 | | | | |
| Agriculture | Livestock | | | | | | | |
| | Enteric Fermentation | 519,547 | | 519,547 | | | | |
| | Manure management | 107,207 | | 88,631 | 18,577 | | | |
| | Crop Production and Soil Management | | | | | | | |
| | Use of Fertilizer | 31,506 | | | 31,506 | | | |
| Crop Residue Incineration | - | | | | | | | |
| Grand Totals | | 6,723,362 | 5,592,254 | 879,538 | 85,828 | 22,996 | 99,181 | 10,359 |

Clinton Emissions

REDC Emissions By Source and Sector
Year: 2010

REDC / County Name: **Clinton**

Color Code
 [Green Box] REQUIRED, though some data may be zero or considered small to count
 [White Box] OPTIONAL
 [Hatched Box] DO NOT Report Data in these cells

| DRAFT Reporting Template CGC. Emissions in MTCDE | | | | | Rolled Up? | Related GHG Metrics / Activity Data | | | |
|--|--|---------|---------|---------|------------|-------------------------------------|-------------|-------|-----------|
| | | Scope 1 | Scope 2 | Scope 3 | | Biogenic | Metric | Unit | Value |
| Built Environment | | | | | | | | | |
| NC Electricity Consumption | Residential Energy Consumption Electricity / Steam | | 100,623 | | | Yes | Consumption | MMBTU | 1,512,719 |
| NC Direct Residential Fuel Consumption | Natural Gas | 22,614 | | | | Yes | Consumption | MMBTU | 426,109 |
| NC Direct Residential Fuel Consumption | Propane / LPG | 7,618 | | | | Yes | Consumption | MMBTU | 120,481 |
| NC Direct Residential Fuel Consumption | Distillate Fuel Oil (#1, #2, Kerosene) | 89,386 | | | | Yes | Consumption | MMBTU | 1,204,518 |
| NC Direct Residential Fuel Consumption | Wood | 2,101 | | | 99,826 | Yes | Consumption | MMBTU | 1,064,247 |
| NC Electricity Consumption | Commercial Energy Consumption Electricity / Steam | | 78,426 | | | Yes | Consumption | MMBTU | 1,179,013 |
| NC Commercial Direct Fuel Consumption | Natural Gas | 15,344 | | | | Yes | Consumption | MMBTU | 289,112 |
| NC Commercial Direct Fuel Consumption | Propane / LPG | 2,505 | | | | Yes | Consumption | MMBTU | 39,622 |
| NC Commercial Direct Fuel Consumption | Distillate Fuel Oil (#1, #2, Kerosene) | 72,207 | | | | Yes | Consumption | MMBTU | 973,021 |
| NC Commercial Direct Fuel Consumption | Residual Fuel Oil (#4 and #6) | | | | | Yes | Consumption | MMBTU | |
| NC Commercial Direct Fuel Consumption | Coal | 64 | | | | Yes | Consumption | MMBTU | 619 |
| NC Commercial Direct Fuel Consumption | Wood | 600 | | | 28,523 | Yes | Consumption | MMBTU | 304,083 |
| NC Electricity Consumption | Industrial Energy Consumption Electricity / Steam | | 68,006 | | | Yes | Consumption | MMBTU | 1,022,364 |
| NC Industrial Title V Consumption | Natural Gas | 33,400 | | | | Yes | Consumption | MMBTU | 629,340 |
| NC Industrial Title V Consumption | Propane / LPG | - | | | | Yes | Consumption | MMBTU | - |
| NC Industrial Title V Consumption | Distillate Fuel Oil (#1, #2, Kerosene) | 608 | | | | Yes | Consumption | MMBTU | 8,197 |
| NC Industrial Title V Consumption | Residual Fuel Oil (#4 and #6) | - | | | | Yes | Consumption | MMBTU | - |
| NC Industrial Title V Consumption | Coal | - | | | | Yes | Consumption | MMBTU | - |
| NC Industrial Title V Consumption | Wood | - | | | - | Yes | Consumption | MMBTU | - |
| Energy Generation and Supply | Energy Generation and Supply Coal and Coke | | | | | No | Consumption | MMBTU | - |

REDC Emissions By Source and Sector
Year: 2010

REDC / County Name **Clinton**

Color Code
 REQUIRED, though some data may be zero or considered to small to count
 OPTIONAL
 DO NOT Report Data in these cells

| DRAFT Reporting Template CGC. Emissions in MTCDE | | | | | Rolled Up? | Related GHG Metrics / Activity Data | | |
|--|---|----------------|----------------|---------------|------------|-------------------------------------|--------|------------------|
| | | Scope 1 | Scope 2 | Scope 3 | | Biogenic | Metric | Unit |
| NC Emission Summary -Com Marine | Gasoline | - | | | | Consumption | MMBTU | - |
| NC Emission Summary -Com Marine | Distillate Fuels | - | | | | Consumption | MMBTU | - |
| NC Emission Summary -Com Marine | Residual Fuels | - | | | | Consumption | MMBTU | - |
| NC Emission Summary-Aircraft | Air | | | | | | | |
| | All Fuels (Jet and Aviation Gasoline) | 1,566 | | | | Consumption | MMBTU | 35,933 |
| NC Emission Summary-Nonroad | Non-road Mobile | | | | | | | |
| | All Fuels (Diesel and Gasoline) | 69,477 | | | | Consumption | MMBTU | 974,219 |
| Waste Management | Solid Waste Management | | | | | | | |
| NC Waste | Landfill Methane and Combustion | 120,749 | | 19,963 | | MSW+CD Generated | Tonnes | 65,296 |
| Not Reported | MSW incineration (non grid connected) | | | | | MSW+CD Processed | Tonnes | 153,644 |
| | Sewage Treatment | | | | | MSW Sent for Incineration | Tonnes | |
| NC Waste water | Central WWTPs and Septic Systems | 9,717 | | | | MSW incinerated in Boundary | Tonnes | |
| Agriculture | Livestock | | | | | | | |
| GHG_NC_Agriculture | Enteric Fermentation | 72,623 | | | | | | |
| GHG_NC_Agriculture | Manure management | 15,609 | | | | | | |
| | Crop Production and Soil Management | | | | | | | |
| GHG_NC_Agriculture | Use of Fertilizer | 3,796 | | | | | | |
| Not Reported | Crop Residue Incineration | | | | | | | |
| Land Use and Forestry | | | | | | | | |
| GHG_NC_Forest | Urban Forest Annual Reserve | 44,191 | | | | | | |
| GHG_NC_Forest | Forest Carbon Reserve (TOTAL) | 87,724,751 | | | | | | |
| Grand Totals | Gross Totals | 897,890 | 261,434 | 19,963 | | | | 1,179,287 |
| | Total with Aircraft (as reported in NC Sustainability Plan) | 900,456 | 261,434 | 19,963 | | | | 1,181,853 |
| | Net Totals | | | | | | | |

Clinton Roll Up

REDC GHG Emissions Roll Up Report

Year: 2010

(all emissions in Column D, when summed will equal the total County or REDC protocol compliant GHG emissions estimate)

REDC / County Name **Clinton**

Color Code

REDC REQUIRED for the Roll Up Report, though some data may be zero, N/A, or considered to small to count
NO DATA Report NO Data in cell

| DRAFT Roll Up Report CGC. Emissions in MTCDE | | | | | | | |
|--|--|---------|---------|--------|-------|-----|-------|
| | CO2e | CO2 | CH4 | N2O | PFC | HFC | SF6 |
| Built Environment | Residential Energy Consumption | | | | | | |
| | Electricity / Steam | 100,623 | 100,134 | 67 | 422 | | |
| | Natural Gas | 22,614 | 22,592 | 9 | 13 | | |
| | Propane / LPG | 7,618 | 7,588 | 8 | 22 | | |
| | Distillate Fuel Oil (#1, #2, Kerosene) | 89,386 | 89,086 | 76 | 224 | | |
| | Wood | 2,101 | - | 715 | 1,386 | | |
| | Commercial Energy Consumption | | | | | | |
| | Electricity / Steam | 78,426 | 78,044 | 52 | 329 | | |
| | Natural Gas | 15,344 | 15,329 | 6 | 9 | | |
| | Propane / LPG | 2,505 | 2,495 | 2 | 7 | | |
| | Distillate Fuel Oil (#1, #2, Kerosene) | 72,207 | 71,965 | 61 | 181 | | |
| | Residual Fuel Oil (#4 and #6) | - | - | - | - | | |
| | Coal | 64 | 63 | 0 | 0 | | |
| | Wood | 600 | - | 204 | 396 | | |
| | Industrial Energy Consumption | | | | | | |
| | Electricity / Steam | 68,006 | 67,675 | 45 | 285 | | |
| | Natural Gas | 33,400 | 33,368 | 13 | 20 | | |
| | Propane / LPG | - | - | - | - | | |
| | Distillate Fuel Oil (#1, #2, Kerosene) | 608 | 606 | 1 | 2 | | |
| | Residual Fuel Oil (#4 and #6) | - | - | - | - | | |
| | Coal | - | - | - | - | | |
| | Wood | - | - | - | - | | |
| | Energy Generation and Supply | | | | | | |
| | Electricity T/D Losses | 14,379 | 14,309 | 10 | 60 | | |
| | Natural Gas T/D Losses | 39,376 | | 39,376 | | | |
| | Use of SF6 in the Utility Industry | 3,307 | | | | | |
| | | | | | | | 3,307 |
| | Industrial Processes | | | | | | |
| | Cement Production | - | - | - | - | | |
| | Iron and Steel Production | - | - | - | - | | |
| | Ferroalloy Production | - | - | - | - | | |
| | Aluminum Production | - | - | - | - | | |
| | Paper and Pulp | - | - | - | - | | |

REDC GHG Emissions Roll Up Report

Year: 2010

(all emissions in Column D, when summed will equal the total County or REDC protocol compliant GHG emissions estimate)

REDC / County Name **Clinton**

Color Code

REQUIRED for the Roll Up Report, though some data may be zero, N/A, or considered to small to count
 Report NO Data in cell

| DRAFT Roll Up Report CGC. Emissions in MTCDE | | | | | | | | |
|--|--|------------------|----------------|----------------|---------------|----------|---------------|--------------|
| | | CO2e | CO2 | CH4 | N2O | PFC | HFC | SF6 |
| | Limestone Use | - | | | | | | |
| | Soda Ash Use | - | | | | | | |
| | Semi-Conductor Manufacturing | - | | | | | | |
| | Chemical Manufacturing | - | | | | | | |
| | Product Use (ODS Substitutes) | - | | | | | | |
| | All Refrigerants- except utility SF6 | 18,804 | | | | | 18,804 | |
| Transportation Energy | On-road: ALL (Total not ethanol) | | | | | | | |
| | Motor Gasoline (E-10) | 315,834 | 314,718 | 834 | 282 | | | |
| | Diesel | 96,124 | 95,802 | 241 | 82 | | | |
| | Ethanol | - | | | | | | |
| | Biodiesel | - | | | | | | |
| | Rail | | | | | | | |
| | Diesel | 6,776 | 6,753 | 17 | 6 | | | |
| | Electricity Consumption | - | | | | | | |
| | Marine | | | | | | | |
| | Gasoline | - | | | | | | |
| | Distillate | - | - | - | - | | | |
| | Residual Fuel Oil | - | - | - | - | | | |
| | Off-road Mobile | | | | | | | |
| | All Fuels (Diesel and Gasoline) | 69,477 | 69,236 | 180 | 61 | | | |
| Waste Management | Solid Waste Management | | | | | | | |
| | Landfill Methane and Combustion | 19,963 | 28 | 19,935 | 0 | | | |
| | MSW incineration (non grid connected) | - | | | | | | |
| | Sewage Treatment | | | | | | | |
| | Central WWTPs and Septic Systems | 9,717 | | 7,288 | 2,429 | | | |
| Agriculture | Livestock | | | | | | | |
| | Enteric Fermentation | 72,623 | | 72,623 | | | | |
| | Manure management | 15,609 | | 12,881 | 2,728 | | | |
| | Crop Production and Soil Management | | | | | | | |
| | Use of Fertilizer | 3,796 | | | 3,796 | | | |
| | Crop Residue Incineration | - | | | | | | |
| Grand Totals | | 1,179,287 | 989,791 | 154,644 | 12,741 | - | 18,804 | 3,307 |

Essex Emissions

REDC Emissions By Source and Sector
Year: 2010

REDC / County Name: **Essex**

Color Code

REQUIRED, though some data may be zero or considered to small to count
OPTIONAL
DO NOT Report Data in these cells

| DRAFT Reporting Template CGC. Emissions in MTCDE | | | | | Rolled Up? | Related GHG Metrics / Activity Data | | | |
|--|--|---------|---------|---------|------------|-------------------------------------|-------------|-------|-----------|
| | | Scope 1 | Scope 2 | Scope 3 | | Biogenic | Metric | Unit | Value |
| Built Environment | | | | | | | | | |
| NC Electricity Consumption | Residential Energy Consumption Electricity / Steam | | 27,992 | | | Yes | Consumption | MMBTU | 420,818 |
| NC Direct Residential Fuel Consumption | Natural Gas | 9,661 | | | | Yes | Consumption | MMBTU | 182,028 |
| NC Direct Residential Fuel Consumption | Propane / LPG | 13,738 | | | | Yes | Consumption | MMBTU | 12,040 |
| NC Direct Residential Fuel Consumption | Distillate Fuel Oil (#1, #2, Kerosene) | 61,196 | | | | Yes | Consumption | MMBTU | 824,645 |
| NC Direct Residential Fuel Consumption | Wood | 1,961 | | | 93,180 | Yes | Consumption | MMBTU | 993,385 |
| NC Electricity Consumption | Commercial Energy Consumption Electricity / Steam | | 17,178 | | | Yes | Consumption | MMBTU | 258,250 |
| NC Commercial Direct Fuel Consumption | Natural Gas | 5,317 | | | | Yes | Consumption | MMBTU | 100,186 |
| NC Commercial Direct Fuel Consumption | Propane / LPG | 3,667 | | | | Yes | Consumption | MMBTU | 57,994 |
| NC Commercial Direct Fuel Consumption | Distillate Fuel Oil (#1, #2, Kerosene) | 40,127 | | | | Yes | Consumption | MMBTU | 540,726 |
| NC Commercial Direct Fuel Consumption | Residual Fuel Oil (#4 and #6) | | | | | Yes | Consumption | MMBTU | |
| NC Commercial Direct Fuel Consumption | Coal | 20 | | | | Yes | Consumption | MMBTU | 191 |
| NC Commercial Direct Fuel Consumption | Wood | 455 | | | 21,610 | Yes | Consumption | MMBTU | 230,379 |
| | Industrial Energy Consumption | | | | | | | | |
| NC Electricity Consumption | Electricity / Steam | | 27,869 | | | Yes | Consumption | MMBTU | 418,968 |
| NC Industrial Title V Consumption | Natural Gas | - | | | | Yes | Consumption | MMBTU | - |
| NC Industrial Title V Consumption | Propane / LPG | 221 | | | | Yes | Consumption | MMBTU | 3,492 |
| NC Industrial Title V Consumption | Distillate Fuel Oil (#1, #2, Kerosene) | 485 | | | | Yes | Consumption | MMBTU | 6,538 |
| NC Industrial Title V Consumption | Residual Fuel Oil (#4 and #6) | 236,076 | | | | Yes | Consumption | MMBTU | 3,133,104 |
| NC Industrial Title V Consumption | Coal | | | | | Yes | Consumption | MMBTU | |
| NC Industrial Title V Consumption | Wood | 1,928 | | | 91,613 | Yes | Consumption | MMBTU | 976,685 |
| | Energy Generation and Supply | | | | | | | | |
| NC Elec Generation GHG Analysis | Coal and Coke | - | | | | No | Consumption | MMBTU | - |
| NC Elec Generation GHG Analysis | Natural Gas | - | | | | No | Consumption | MMBTU | - |
| NC Elec Generation GHG Analysis | Distillate Fuel Oil (#1, #2 and #4) | 86 | | | | No | Consumption | MMBTU | 1,159 |
| NC Elec Generation GHG Analysis | Residual Fuel Oil (#4 and #6) | 81,846 | | | | No | Consumption | MMBTU | 1,086,225 |
| NC Elec Generation GHG Analysis | Wood / Biomass | 3,100 | | | 147,327 | No | Consumption | MMBTU | 1,570,652 |

REDC Emissions By Source and Sector
Year: 2010

REDC / County Name: **Essex**

Color Code
 [Green Box] REQUIRED, though some data may be zero or considered to small to count
 [White Box] OPTIONAL
 [Hatched Box] DO NOT Report Data in these cells

| DRAFT Reporting Template CGC. Emissions in MTCDE | | | | | Rolled Up? | Related GHG Metrics / Activity Data | | | |
|--|---|---------|---------|---------|------------|-------------------------------------|---------------|-------|-----------|
| | | Scope 1 | Scope 2 | Scope 3 | | Biogenic | Metric | Unit | Value |
| NC Elec Generation GHG Analysis | MSW and landfill emissions | - | | | | - | MSW Combusted | MMBTU | - |
| NC Elec Generation GHG Analysis | Other | - | | | | - | | | - |
| NC Elec Generation GHG Analysis | Electricity T/D Losses | | 4,251 | | | 63,906 | Losses | MMBTU | 63,906 |
| NC Elec Generation GHG Analysis and NC Direct Fuel Consumption | Natural Gas T/D Losses | 2,109 | | | | | Losses | MMBTU | |
| NC Electricity Consumption | Use of SF6 in the Utility Industry | 978 | | | | | Consumption | MMBTU | |
| Industrial Processes | Industrial Processes | | | | | | | | |
| Not Reported | Cement Production | | | | | | | | |
| NC Industrial Sources | Iron and Steel Production | | | | | | | | |
| NC Industrial Sources | Ferroalloy Production | | | | | | | | |
| Not Reported | Aluminum Production | | | | | | | | |
| Not Reported | Paper and Pulp | 33,205 | | | | | | | |
| Not Reported | Limestone Use | | | | | | | | |
| Not Reported | Soda Ash Use | | | | | | | | |
| Not Reported | Semi-Conductor Manufacturing | | | | | | | | |
| Not Reported | Glass Production | | | | | | | | |
| Not Reported | Chemical Manufacturing | | | | | | | | |
| Product Use (Ozone Depleting Substances) | Product Use (Ozone Depleting Substances) | | | | | | | | |
| NC Industrial Sources | All Refrigerants- except SF6 | 9,014 | | | | | | | |
| Transportation Energy | On-road | | | | | | | | |
| NC Emission Summary - Onroad | Motor Gasoline (E-10) | 208,370 | | | 15,123 | 3,177,685 | Consumption | MMBTU | 3,177,685 |
| NC Emission Summary - Onroad | Diesel | 56,529 | | | | 761,748 | Consumption | MMBTU | 761,748 |
| Not Reported | Ethanol (E-85) | | | | | | Consumption | MMBTU | |
| Not Reported | Biodiesel | | | | | | Consumption | MMBTU | |
| Not Reported | Electricity Consumption | | | | | | Consumption | MMBTU | |

**REDC Emissions By Source and Sector
Year: 2010**

REDC / County Name **Essex**

Color Code
 [Green Box] REQUIRED, though some data may be zero or considered too small to count
 [White Box] OPTIONAL
 [Hatched Box] DO NOT Report Data in these cells

| DRAFT Reporting Template CGC. Emissions in MTCDE | | | | | Rolled Up? | Related GHG Metrics / Activity Data | | |
|--|---|-------------|---------|---------|------------|-------------------------------------|--------|----------------|
| | | Scope 1 | Scope 2 | Scope 3 | | Biogenic | Metric | Unit |
| NC Emission Summary - Rail | Rail | 8,281 | | | | | | |
| | Diesel | | | | | Consumption | MMBTU | 111,592 |
| NC Emission Summary - Rail | Electricity Consumption | | | | | Consumption | MMBTU | |
| | Marine | | | | | | | |
| NC Emission Summary -Com Marine | Gasoline | | | | | Consumption | MMBTU | |
| NC Emission Summary -Com Marine | Distillate Fuels | | | | | Consumption | MMBTU | |
| NC Emission Summary -Com Marine | Residual Fuels | | | | | Consumption | MMBTU | |
| | Air | | | | | | | |
| NC Emission Summary-Aircraft | All Fuels (Jet and Aviation Gasoline) | 601 | | | | Consumption | MMBTU | 6,078 |
| | Non-road Mobile | | | | | | | |
| NC Emission Summary-Nonroad | All Fuels (Diesel and Gasoline) | 75,405 | | | | Consumption | MMBTU | 1,057,070 |
| Waste Management | Solid Waste Management | | | | | | | |
| NC Waste | Landfill Methane and Combustion | 32,066 | | 6,866 | | MSW+CD Generated | Tonnes | 22,458 |
| Not Reported | MSW incineration (non grid connected) | | | | | MSW+CD Processed | Tonnes | |
| | Sewage Treatment | | | | | MSW Sent for Incineration | Tonnes | |
| NC Waste water | Central WWTPs and Septic Systems | 4,206 | | | | MSW incinerated in Boundary | Tonnes | |
| | Livestock | | | | | | | |
| GHG_NC_Agriculture | Enteric Fermentation | 8,834 | | | | | | |
| GHG_NC_Agriculture | Manure management | 1,577 | | | | | | |
| | Crop Production and Soil Management | | | | | | | |
| GHG_NC_Agriculture | Use of Fertilizer | 1,000 | | | | | | |
| Not Reported | Crop Residue Incineration | | | | | | | |
| | Land Use and Forestry | | | | | | | |
| GHG_NC_Forest | Urban Forest Annual Reserve | 15,548 | | | | | | |
| GHG_NC_Forest | Forest Carbon Reserve (TOTAL) | 196,171,820 | | | | | | |
| Grand Totals | Gross Totals | 784,352 | 77,290 | 6,866 | | | | 868,508 |
| | Total with Aircraft (as reported in NC Sustainability Plan) | 784,952 | 77,290 | 6,866 | | | | 869,109 |
| | Net Totals | | | | | | | |

Essex Roll Up

REDC GHG Emissions Roll Up Report

Year: 2010

(all emissions in Column D, when summed will equal the total County or REDC protocol compliant GHG emissions estimate)

REDC / County Name **Essex**

Color Code

Green REQUIRED for the Roll Up Report, though some data may be zero, N/A, or considered to small to count
Grey Report NO Data in cell

| DRAFT Roll Up Report CGC. Emissions in MTCDE | | | | | | | |
|--|--|---------|---------|-------|-------|-----|-----|
| | CO2e | CO2 | CH4 | N2O | PFC | HFC | SF6 |
| Built Environment | Residential Energy Consumption | | | | | | |
| | Electricity / Steam | 27,992 | 27,856 | 19 | 117 | | |
| | Natural Gas | 9,661 | 9,651 | 4 | 6 | | |
| | Propane / LPG | 13,738 | 13,684 | 14 | 40 | | |
| | Distillate Fuel Oil (#1, #2, Kerosene) | 61,196 | 60,991 | 52 | 153 | | |
| | Wood | 1,961 | - | 668 | 1,293 | | |
| | Commercial Energy Consumption | | | | | | |
| | Electricity / Steam | 17,178 | 17,095 | 11 | 72 | | |
| | Natural Gas | 5,317 | 5,312 | 2 | 3 | | |
| | Propane / LPG | 3,667 | 3,652 | 4 | 11 | | |
| | Distillate Fuel Oil (#1, #2, Kerosene) | 40,127 | 39,992 | 34 | 101 | | |
| | Residual Fuel Oil (#4 and #6) | - | | | | | |
| | Coal | 20 | 20 | 0 | 0 | | |
| | Wood | 455 | - | 155 | 300 | | |
| | Industrial Energy Consumption | | | | | | |
| | Electricity / Steam | 27,869 | 27,734 | 19 | 117 | | |
| | Natural Gas | - | - | - | - | | |
| | Propane / LPG | 221 | 220 | 0 | 1 | | |
| | Distillate Fuel Oil (#1, #2, Kerosene) | 485 | 483 | 0 | 1 | | |
| | Residual Fuel Oil (#4 and #6) | 236,076 | 235,296 | 197 | 583 | | |
| | Coal | - | | | | | |
| | Wood | 1,928 | | 656 | 1,272 | | |
| | Energy Generation and Supply | | | | | | |
| | Electricity T/D Losses | 4,251 | 4,230 | 3 | 18 | | |
| | Natural Gas T/D Losses | 2,109 | | 2,109 | | | |
| | Use of SF6 in the Utility Industry | 978 | | | | | 978 |
| | Industrial Processes | | | | | | |
| | Cement Production | - | | | | | |
| | Iron and Steel Production | - | | | | | |
| | Ferroalloy Production | - | | | | | |
| | Aluminum Production | - | - | | | | |
| | Paper and Pulp | 33,205 | | | | | |

REDC GHG Emissions Roll Up Report

Year: 2010

(all emissions in Column D, when summed will equal the total County or REDC protocol compliant GHG emissions estimate)

REDC / County Name **Essex**

Color Code

REQUIRED for the Roll Up Report, though some data may be zero, N/A, or considered to small to count
 Report NO Data in cell

| DRAFT Roll Up Report CGC. Emissions in MTCDE | | | | | | | | |
|--|--|----------------|----------------|---------------|--------------|----------|--------------|------------|
| | | CO2e | CO2 | CH4 | N2O | PFC | HFC | SF6 |
| | Limestone Use | - | | | | | | |
| | Soda Ash Use | - | | | | | | |
| | Semi-Conductor Manufacturing | - | | | | | | |
| | Chemical Manufacturing | - | | | | | | |
| | Product Use (ODS Substitutes) | - | | | | | | |
| | All Refrigerants- except utility SF6 | 9,014 | | | | | 9,014 | |
| Transportation Energy | On-road: ALL (Total not ethanol) | | | | | | | |
| | Motor Gasoline (E-10) | 208,370 | 207,634 | 550 | 186 | | | |
| | Diesel | 56,529 | 56,339 | 142 | 48 | | | |
| | Ethanol | - | | | | | | |
| | Biodiesel | - | | | | | | |
| | Rail | | | | | | | |
| | Diesel | 8,281 | 8,253 | 21 | 7 | | | |
| | Electricity Consumption | - | | | | | | |
| | Marine | | | | | | | |
| | Gasoline | - | | | | | | |
| | Distillate | - | - | - | - | | | |
| | Residual Fuel Oil | - | - | - | - | | | |
| | Off-road Mobile | | | | | | | |
| | All Fuels (Diesel and Gasoline) | 75,405 | 75,142 | 196 | 67 | | | |
| Waste Management | Solid Waste Management | | | | | | | |
| | Landfill Methane and Combustion | 6,866 | 9 | 6,857 | 0 | | | |
| | MSW incineration (non grid connected) | - | | | | | | |
| | Sewage Treatment | | | | | | | |
| | Central WWTPs and Septic Systems | 4,206 | | 3,155 | 1,052 | | | |
| Agriculture | Livestock | | | | | | | |
| | Enteric Fermentation | 8,834 | | 8,834 | | | | |
| | Manure management | 1,572 | | 1,310 | 262 | | | |
| | Crop Production and Soil Management | | | | | | | |
| | Use of Fertilizer | 1,000 | | | 1,000 | | | |
| | Crop Residue Incineration | - | | | | | | |
| Grand Totals | | 868,508 | 793,593 | 25,010 | 6,709 | - | 9,014 | 978 |

Franklin Emissions

REDC Emissions By Source and Sector
Year: 2010

REDC / County Name: Franklin

Color Code
 [Green Box] REQUIRED, though some data may be zero or considered to small to count
 [White Box] OPTIONAL
 [Hatched Box] DO NOT Report Data in these cells

| DRAFT Reporting Template CGC. Emissions in MTCDE | | | | | Rolled Up? | Related GHG Metrics / Activity Data | | |
|--|---------|---------|---------|----------|------------|-------------------------------------|-------|-----------|
| | Scope 1 | Scope 2 | Scope 3 | Biogenic | | Metric | Unit | Value |
| Built Environment | | | | | | | | |
| NC Electricity Consumption | | 29,753 | | | Yes | Consumption | MMBTU | 447,284 |
| NC Direct Residential Fuel Consumption | 10,188 | | | | Yes | Consumption | MMBTU | 191,958 |
| NC Direct Residential Fuel Consumption | 10,109 | | | | Yes | Consumption | MMBTU | 159,856 |
| NC Direct Residential Fuel Consumption | 84,036 | | | | Yes | Consumption | MMBTU | 1,132,428 |
| NC Direct Residential Fuel Consumption | 2,114 | | | 100,435 | Yes | Consumption | MMBTU | 1,070,733 |
| Commercial Energy Consumption | | | | | | | | |
| NC Electricity Consumption | | 13,252 | | | Yes | Consumption | MMBTU | 199,221 |
| NC Commercial Direct Fuel Consumption | 5,585 | | | | Yes | Consumption | MMBTU | 105,229 |
| NC Commercial Direct Fuel Consumption | 2,686 | | | | Yes | Consumption | MMBTU | 42,474 |
| NC Commercial Direct Fuel Consumption | 54,848 | | | | Yes | Consumption | MMBTU | 739,101 |
| NC Commercial Direct Fuel Consumption | | | | | Yes | Consumption | MMBTU | |
| NC Commercial Direct Fuel Consumption | 110 | | | | Yes | Consumption | MMBTU | 1,066 |
| NC Commercial Direct Fuel Consumption | 488 | | | 23,186 | Yes | Consumption | MMBTU | 247,181 |
| Industrial Energy Consumption | | | | | | | | |
| NC Electricity Consumption | | 20,741 | | | Yes | Consumption | MMBTU | 311,813 |
| NC Industrial Title V Consumption | - | | | | Yes | Consumption | MMBTU | - |
| NC Industrial Title V Consumption | - | | | | Yes | Consumption | MMBTU | - |
| NC Industrial Title V Consumption | - | | | | Yes | Consumption | MMBTU | - |
| NC Industrial Title V Consumption | - | | | | Yes | Consumption | MMBTU | - |
| NC Industrial Title V Consumption | - | | | | Yes | Consumption | MMBTU | - |
| NC Industrial Title V Consumption | - | | | | Yes | Consumption | MMBTU | - |
| Energy Generation and Supply | | | | | | | | |
| NC Elec Generation GHG Analysis | - | | | | No | Consumption | MMBTU | - |
| NC Elec Generation GHG Analysis | - | | | | No | Consumption | MMBTU | - |
| NC Elec Generation GHG Analysis | - | | | | No | Consumption | MMBTU | - |
| NC Elec Generation GHG Analysis | - | | | | No | Consumption | MMBTU | - |
| NC Elec Generation GHG Analysis | 4,005 | | | 190,331 | No | Consumption | MMBTU | 2,029,120 |
| NC Elec Generation GHG Analysis | - | | | | No | MSW Combusted | MMBTU | - |
| NC Elec Generation GHG Analysis | - | | | | | | | - |
| NC Elec Generation GHG Analysis | - | 3,710 | | | Yes | Losses | MMBTU | 55,774 |
| NC Elec Generation GHG Analysis and NC Direct Fuel Consumption | 2,221 | | | | Yes | Losses | MMBTU | |
| NC Electricity Consumption | 853 | | | | Yes | Consumption | MMBTU | |
| Industrial Processes | | | | | | | | |
| Not Reported | | | | | Yes | | | |
| NC Industrial Sources | | | | | Yes | | | |
| NC Industrial Sources | | | | | Yes | | | |
| Not Reported | | | | | Yes | | | |
| Not Reported | | | | | Yes | | | |
| Not Reported | | | | | Yes | | | |
| Not Reported | | | | | Yes | | | |
| Not Reported | | | | | Yes | | | |
| Not Reported | | | | | Yes | | | |
| Not Reported | | | | | Yes | | | |
| Not Reported | | | | | Yes | | | |
| Product Use (Ozone Depleting Substances) | | | | | | | | |
| NC Industrial Sources | 11,814 | | | | Yes | | | |

REDC Emissions By Source and Sector
Year: 2010

REDC / County Name **Franklin**

Color Code
 REQUIRED, though some data may be zero or considered to small to count
 OPTIONAL
 DO NOT Report Data in these cells

| DRAFT Reporting Template CGC. Emissions in MTCDE | | | | | Rolled Up? | Related GHG Metrics / Activity Data | | |
|--|---|-------------|---------|---------|------------|-------------------------------------|--------|-----------|
| | Scope 1 | Scope 2 | Scope 3 | Bioenic | | Metric | Unit | Value |
| Transportation Energy | On-road | | | | | | | |
| NC Emission Summary - Onroad | Motor Gasoline (E-10) | 162,809 | | | 11,816 | Consumption | MMBTU | 2,482,864 |
| NC Emission Summary - Onroad | Diesel | 37,507 | | | | Consumption | MMBTU | 505,430 |
| Not Reported | Ethanol (E-85) | | | | | Consumption | MMBTU | |
| Not Reported | Biodiesel | | | | | Consumption | MMBTU | |
| Not Reported | Electricity Consumption | | | | | Consumption | MMBTU | |
| | Rail | | | | | | | |
| NC Emission Summary - Rail | Diesel | 3,343 | | | | Consumption | MMBTU | 45,052 |
| NC Emission Summary - Rail | Electricity Consumption | | | | | Consumption | MMBTU | |
| | Marine | | | | | | | |
| NC Emission Summary -Com Marine | Gasoline | | | | | Consumption | MMBTU | |
| NC Emission Summary -Com Marine | Distillate Fuels | 1,672 | | | | Consumption | MMBTU | 22,527 |
| NC Emission Summary -Com Marine | Residual Fuels | | | | | Consumption | MMBTU | |
| | Air | | | | | | | |
| NC Emission Summary-Aircraft | All Fuels (Jet and Aviation Gasoline) | 356 | | | | Consumption | MMBTU | 5,013 |
| | Non-road Mobile | | | | | | | |
| NC Emission Summary-Nonroad | All Fuels (Diesel and Gasoline) | 51,725 | | | | Consumption | MMBTU | 722,521 |
| Waste Management | Solid Waste Management | | | | | | | |
| NC Waste | Landfill Methane and Combustion | | 11,064 | | | MSW+CD Generated | Tonnes | 36,191 |
| Not Reported | MSW incineration (non grid connected) | | | | | MSW+CD Processed | Tonnes | 49,181 |
| | Sewage Treatment | | | | | | | |
| NC Waste water | Central WWTPs and Septic Systems | 3,425 | | | | MSW Sent for Incineration | Tonnes | |
| | Livestock | | | | | MSW incinerated in Boundary | Tonnes | |
| GHG_NC_Agriculture | Enteric Fermentation | 64,166 | | | | | | |
| GHG_NC_Agriculture | Manure management | 12,985 | | | | | | |
| | Crop Production and Soil Management | | | | | | | |
| GHG_NC_Agriculture | Use of Fertilizer | 3,608 | | | | | | |
| Not Reported | Crop Residue Incineration | | | | | | | |
| Land Use and Forestry | | | | | | | | |
| GHG_NC_Forest | Urban Forest Annual Reserve | 24,981 | | | | | | |
| GHG_NC_Forest | Forest Carbon Reserve (TOTAL) | 157,855,694 | | | | | | |
| Grand Totals | Gross Totals | 526,289 | 67,456 | 11,064 | | | | 604,809 |
| | Total with Aircraft (as reported in NC Sustainability Plan) | 526,645 | 67,456 | 11,064 | | | | 605,165 |
| | Net Totals | | | | | | | |

Franklin Roll Up

REDC GHG Emissions Roll Up Report

Year: 2010

(all emissions in Column D, when summed will equal the total County or REDC protocol compliant GHG emissions estimate)

REDC / County Name **Franklin**

Color Code

REQUIRED for the Roll Up Report, though some data may be zero, N/A, or considered to small to count
 Report NO Data in cell

| DRAFT Roll Up Report CGC. Emissions in MTCDE | | | | | | | |
|--|--|--------|--------|-------|-------|-----|-----|
| | | CO2e | CO2 | CH4 | N2O | PFC | SF6 |
| Built Environment | Residential Energy Consumption | | | | | | |
| | Electricity / Steam | 29,753 | 29,608 | 20 | 125 | | |
| | Natural Gas | 10,188 | 10,178 | 4 | 6 | | |
| | Propane / LPG | 10,108 | 10,068 | 10 | 30 | | |
| | Distillate Fuel Oil (#1, #2, Kerosene) | 84,036 | 83,754 | 71 | 211 | | |
| | Wood | 2,114 | - | 720 | 1,394 | | |
| | Commercial Energy Consumption | | | | | | |
| | Electricity / Steam | 13,252 | 13,187 | 9 | 56 | | |
| | Natural Gas | 5,585 | 5,579 | 2 | 3 | | |
| | Propane / LPG | 2,686 | 2,675 | 3 | 8 | | |
| | Distillate Fuel Oil (#1, #2, Kerosene) | 54,848 | 54,664 | 47 | 137 | | |
| | Residual Fuel Oil (#4 and #6) | - | | | | | |
| | Coal | 110 | 109 | 0 | 1 | | |
| | Wood | 488 | - | 166 | 322 | | |
| | Industrial Energy Consumption | | | | | | |
| | Electricity / Steam | 20,741 | 20,640 | 14 | 87 | | |
| | Natural Gas | - | - | - | - | | |
| | Propane / LPG | - | - | - | - | | |
| | Distillate Fuel Oil (#1, #2, Kerosene) | - | - | - | - | | |
| | Residual Fuel Oil (#4 and #6) | - | - | - | - | | |
| | Coal | - | | | | | |
| | Wood | - | | - | - | | |
| | Energy Generation and Supply | | | | | | |
| | Electricity T/D Losses | 3,710 | 3,692 | 2 | 16 | | |
| | Natural Gas T/D Losses | 2,221 | | 2,221 | | | |
| | Use of SF6 in the Utility Industry | 853 | | | | | 853 |
| | Industrial Processes | | | | | | |
| | Cement Production | - | | | | | |
| | Iron and Steel Production | - | | | | | |
| | Ferrous Production | - | | | | | |

REDC GHG Emissions Roll Up Report

Year: 2010

(all emissions in Column D, when summed will equal the total County or REDC protocol compliant GHG emissions estimate)

REDC / County Name **Franklin**

Color Code

REQUIRED for the Roll Up Report, though some data may be zero, N/A, or considered to small to count
 Report NO Data in cell

| DRAFT Roll Up Report CGC. Emissions in MTCDE | | | | | | | | |
|--|--|----------------|----------------|---------------|--------------|----------|---------------|------------|
| | | CO2e | CO2 | CH4 | N2O | PFC | HFC | SF6 |
| Manufacturing | Aluminum Production | - | - | | | - | | |
| | Paper and Pulp | - | | | | | | |
| | Limestone Use | - | | | | | | |
| | Soda Ash Use | - | | | | | | |
| | Semi-Conductor Manufacturing | - | | | | | | |
| | Chemical Manufacturing | - | | | | | | |
| | Product Use (ODS Substitutes) | - | | | | | | |
| | All Refrigerants- except utility SF6 | 11,814 | | | | | 11,814 | |
| Transportation Energy | On-road: ALL (Total not ethanol) | | | | | | | |
| | Motor Gasoline (E-10) | 162,809 | 162,233 | 430 | 146 | | | |
| | Diesel | 37,507 | 37,382 | 94 | 32 | | | |
| | Ethanol | - | | | | | | |
| | Biodiesel | - | | | | | | |
| | Rail | | | | | | | |
| | Diesel | 3,343 | 3,332 | 8 | 3 | | | |
| | Electricity Consumption | - | | | | | | |
| | Marine | | | | | | | |
| | Gasoline | - | | | | | | |
| | Distillate | 1,672 | 1,666 | 4 | 1 | | | |
| | Residual Fuel Oil | - | - | - | - | | | |
| | Off-road Mobile | | | | | | | |
| | All Fuels (Diesel and Gasoline) | 51,725 | 51,545 | 134 | 45 | | | |
| Waste Management | Solid Waste Management | | | | | | | |
| | Landfill Methane and Combustion | 11,064 | 15 | 11,049 | 0 | | | |
| | MSW incineration (non grid connected) | - | | | | | | |
| | Sewage Treatment | | | | | | | |
| | Central WWTPs and Septic Systems | 3,425 | | 2,569 | 856 | | | |
| Agriculture | Livestock | | | | | | | |
| | Enteric Fermentation | 64,166 | | 64,166 | | | | |
| | Manure management | 12,985 | | 10,745 | 2,240 | | | |
| | Crop Production and Soil Management | | | | | | | |
| | Use of Fertilizer | 3,608 | | | 3,608 | | | |
| | Crop Residue Incineration | - | | | | | | |
| Grand Totals | | 604,809 | 490,328 | 92,488 | 9,326 | - | 11,814 | 853 |

Hamilton Emissions

REDC Emissions By Source and Sector
Year: 2010

REDC / County Name: **Hamilton**

Color Code
 [Green Box] REQUIRED, though some data may be zero or considered to small to count
 [White Box] OPTIONAL
 [Hatched Box] DO NOT Report Data in these cells

| DRAFT Reporting Template CGC. Emissions in MTCDE | | | | | | Related GHG Metrics / Activity Data | | | |
|--|--|---------|---------|---------|----------|-------------------------------------|---------------|-------|---------|
| | | Scope 1 | Scope 2 | Scope 3 | Biogenic | Rolled Up? | Metric | Unit | Value |
| Built Environment | | | | | | | | | |
| NC Electricity Consumption | Residential Energy Consumption | | 6,406 | | | Yes | Consumption | MMBTU | 96,304 |
| NC Direct Residential Fuel Consumption | Electricity / Steam | | | | | Yes | Consumption | MMBTU | 17,434 |
| NC Direct Residential Fuel Consumption | Natural Gas | 925 | | | | Yes | Consumption | MMBTU | 61,564 |
| NC Direct Residential Fuel Consumption | Propane / LPG | 3,893 | | | | Yes | Consumption | MMBTU | 119,195 |
| NC Direct Residential Fuel Consumption | Distillate Fuel Oil (#1, #2, Kerosene) | 8,845 | | | | Yes | Consumption | MMBTU | 219,375 |
| NC Direct Residential Fuel Consumption | Wood | 433 | | | 20,577 | Yes | Consumption | MMBTU | |
| Commercial Energy Consumption | | | | | | | | | |
| NC Electricity Consumption | Electricity / Steam | | 3,360 | | | Yes | Consumption | MMBTU | 50,516 |
| NC Commercial Direct Fuel Consumption | Natural Gas | 452 | | | | Yes | Consumption | MMBTU | 8,513 |
| NC Commercial Direct Fuel Consumption | Propane / LPG | 921 | | | | Yes | Consumption | MMBTU | 14,570 |
| NC Commercial Direct Fuel Consumption | Distillate Fuel Oil (#1, #2, Kerosene) | 5,142 | | | | Yes | Consumption | MMBTU | 69,292 |
| NC Commercial Direct Fuel Consumption | Residual Fuel Oil (#4 and #6) | | | | | Yes | Consumption | MMBTU | |
| NC Commercial Direct Fuel Consumption | Coal | | | | | Yes | Consumption | MMBTU | |
| NC Commercial Direct Fuel Consumption | Wood | 89 | | | 4,231 | Yes | Consumption | MMBTU | 45,108 |
| Industrial Energy Consumption | | | | | | | | | |
| NC Electricity Consumption | Electricity / Steam | | 565 | | | Yes | Consumption | MMBTU | 8,488 |
| NC Industrial Title V Consumption | Natural Gas | - | | | | Yes | Consumption | MMBTU | - |
| NC Industrial Title V Consumption | Propane / LPG | - | | | | Yes | Consumption | MMBTU | - |
| NC Industrial Title V Consumption | Distillate Fuel Oil (#1, #2, Kerosene) | - | | | | Yes | Consumption | MMBTU | - |
| NC Industrial Title V Consumption | Residual Fuel Oil (#4 and #6) | - | | | | Yes | Consumption | MMBTU | - |
| NC Industrial Title V Consumption | Coal | - | | | | Yes | Consumption | MMBTU | - |
| NC Industrial Title V Consumption | Wood | - | | | | Yes | Consumption | MMBTU | - |
| Energy Generation and Supply | | | | | | | | | |
| NC Elec Generation GHG Analysis | Coal and Coke | - | | | | No | Consumption | MMBTU | - |
| NC Elec Generation GHG Analysis | Natural Gas | - | | | | No | Consumption | MMBTU | - |
| NC Elec Generation GHG Analysis | Distillate Fuel Oil (#1, #2 and #4) | - | | | | No | Consumption | MMBTU | - |
| NC Elec Generation GHG Analysis | Residual Fuel Oil (#4 and #6) | - | | | | No | Consumption | MMBTU | - |
| NC Elec Generation GHG Analysis | Wood / Biomass | - | | | | No | Consumption | MMBTU | - |
| NC Elec Generation GHG Analysis | MSW and landfill emissions | - | | | | No | MSW Combusted | MMBTU | - |

REDC Emissions By Source and Sector
Year: 2010

REDC / County Name: **Hamilton**

Color Code
 [Green Box] REQUIRED, though some data may be zero or considered to small to count
 [White Box] OPTIONAL
 [Hatched Box] DO NOT Report Data in these cells

| DRAFT Reporting Template CGC. Emissions in MTCDE | | | | | Related GHG Metrics / Activity Data | | | | |
|--|---|---------|---------|---------|-------------------------------------|------------|-------------|-------|---------|
| | | Scope 1 | Scope 2 | Scope 3 | Biogenic | Rolled Up? | Metric | Unit | Value |
| NC Elec Generation GHG Analysis | Other | - | | | | | | | - |
| NC Elec Generation GHG Analysis | Electricity T/D Losses | | 601 | | | Yes | Losses | MMBTU | 9,039 |
| NC Elec Generation GHG Analysis and NC Direct Fuel Consumption | Natural Gas T/D Losses | 194 | | | | Yes | Losses | MMBTU | |
| NC Electricity Consumption | Use of SF6 in the Utility Industry | 138 | | | | Yes | Consumption | MMBTU | |
| Industrial Processes | Industrial Processes | | | | | | | | |
| Not Reported | Cement Production | | | | | Yes | | | |
| NC Industrial Sources | Iron and Steel Production | | | | | Yes | | | |
| NC Industrial Sources | Ferroalloy Production | | | | | Yes | | | |
| Not Reported | Aluminum Production | | | | | Yes | | | |
| Not Reported | Paper and Pulp | | | | | Yes | | | |
| Not Reported | Limestone Use | | | | | Yes | | | |
| Not Reported | Soda Ash Use | | | | | Yes | | | |
| Not Reported | Semi-Conductor Manufacturing | | | | | Yes | | | |
| Not Reported | Glass Production | | | | | Yes | | | |
| Not Reported | Chemical Manufacturing | | | | | Yes | | | |
| Product Use (Ozone Depleting Substances) | Product Use (Ozone Depleting Substances) | | | | | | | | |
| NC Industrial Sources | All Refrigerants- except SF6 | 1,107 | | | | Yes | | | |
| Transportation Energy | On-road | | | | | | | | |
| NC Emission Summary - Onroad | Motor Gasoline (E-10) | 35,295 | | | 2,562 | Yes | Consumption | MMBTU | 538,259 |
| NC Emission Summary - Onroad | Diesel | 8,154 | | | | Yes | Consumption | MMBTU | 109,932 |
| Not Reported | Ethanol (E-85) | | | | | No | Consumption | MMBTU | |
| Not Reported | Biodiesel | | | | | No | Consumption | MMBTU | |

**REDC Emissions By Source and Sector
Year: 2010**

REDC / County Name **Hamilton**

Color Code
 [Green Box] REQUIRED, though some data may be zero or considered to small to count
 [White Box] OPTIONAL
 [Hatched Box] DO NOT Report Data in these cells

| DRAFT Reporting Template CGC. Emissions in MTCDE | | | | | Rolled Up? | Related GHG Metrics / Activity Data | | |
|--|---|-------------|---------|---------|------------|-------------------------------------|--------|----------------|
| | | Scope 1 | Scope 2 | Scope 3 | | Biogenic | Metric | Unit |
| Not Reported | Electricity Consumption | | | | | | | |
| | Rail | | | | | | | |
| NC Emission Summary - Rail | Diesel | 23 | | | | Consumption | MMBTU | 390 |
| NC Emission Summary - Rail | Electricity Consumption | | | | | Consumption | MMBTU | |
| | Marine | | | | | | | |
| NC Emission Summary -Com Marine | Gasoline | | | | | Consumption | MMBTU | |
| NC Emission Summary -Com Marine | Distillate Fuels | | | | | Consumption | MMBTU | |
| NC Emission Summary -Com Marine | Residual Fuels | | | | | Consumption | MMBTU | |
| | Air | | | | | | | |
| NC Emission Summary-Aircraft | All Fuels (Jet and Aviation Gasoline) | 75 | | | | Consumption | MMBTU | 1,065 |
| | Non-road Mobile | | | | | | | |
| NC Emission Summary-Nonroad | All Fuels (Diesel and Gasoline) | 99,802 | | | | Consumption | MMBTU | 1,411,536 |
| | Waste Management | | | | | | | |
| NC Waste | Landfill Methane and Combustion | 43,396 | | 2,426 | | MSW+CD Generated | Tonnes | 7,936 |
| Not Reported | MSW incineration (non grid connected) | | | | | MSW+CD Processed | Tonnes | |
| | Sewage Treatment | | | | | MSW Sent for Incineration | Tonnes | |
| NC Waste water | Central WWTPs and Septic Systems | 100 | | | | MSW incinerated in Boundary | Tonnes | |
| | Agriculture | | | | | | | |
| GHG_NC_Agriculture | Enteric Fermentation | 13 | | | | | | |
| GHG_NC_Agriculture | Manure management | 1 | | | | | | |
| | Crop Production and Soil Management | | | | | | | |
| GHG_NC_Agriculture | Use of Fertilizer | 7 | | | | | | |
| Not Reported | Crop Residue Incineration | | | | | | | |
| | Land Use and Forestry | | | | | | | |
| GHG_NC_Forest | Urban Forest Annual Reserve | - | | | | | | |
| GHG_NC_Forest | Forest Carbon Reserve (TOTAL) | 212,743,029 | | | | | | |
| Grand Totals | Gross Totals | 165,547 | 10,932 | 2,426 | | | | 178,906 |
| | Total with Aircraft (as reported in NC Sustainability Plan) | 165,623 | 10,932 | 2,426 | | | | 178,981 |
| | Net Totals | | | | | | | |

Hamilton Roll Up

REDC GHG Emissions Roll Up Report

Year: 2010

(all emissions in Column D, when summed will equal the total County or REDC protocol compliant GHG emissions estimate)

REDC / County Name **Hamilton**

Color Code

REDC REQUIRED for the Roll Up Report, though some data may be zero, N/A, or considered to small to count
NO DATA Report NO Data in cell

| DRAFT Roll Up Report CGC. Emissions in MTCDE | | | | | | | |
|--|--|-------|-------|-----|-----|-----|-----|
| | | CO2e | CO2 | CH4 | N2O | PFC | SF6 |
| Built Environment | Residential Energy Consumption | | | | | | |
| | Electricity / Steam | 6,406 | 6,375 | 4 | 27 | | |
| | Natural Gas | 925 | 924 | 0 | 1 | | |
| | Propane / LPG | 3,893 | 3,877 | 4 | 11 | | |
| | Distillate Fuel Oil (#1, #2, Kerosene) | 8,845 | 8,816 | 8 | 22 | | |
| | Wood | 433 | - | 147 | 286 | | |
| | Commercial Energy Consumption | | | | | | |
| | Electricity / Steam | 3,360 | 3,344 | 2 | 14 | | |
| | Natural Gas | 452 | 451 | 0 | 0 | | |
| | Propane / LPG | 921 | 918 | 1 | 3 | | |
| | Distillate Fuel Oil (#1, #2, Kerosene) | 5,142 | 5,125 | 4 | 13 | | |
| | Residual Fuel Oil (#4 and #6) | - | - | - | - | | |
| | Coal | - | - | - | - | | |
| | Wood | 89 | - | 30 | 59 | | |
| | Industrial Energy Consumption | | | | | | |
| | Electricity / Steam | 565 | 562 | 0 | 2 | | |
| | Natural Gas | - | - | - | - | | |
| | Propane / LPG | - | - | - | - | | |
| | Distillate Fuel Oil (#1, #2, Kerosene) | - | - | - | - | | |
| | Residual Fuel Oil (#4 and #6) | - | - | - | - | | |
| | Coal | - | - | - | - | | |
| | Wood | - | - | - | - | | |
| | Energy Generation and Supply | | | | | | |
| | Electricity T/D Losses | 601 | 598 | 0 | 3 | | |
| | Natural Gas T/D Losses | 194 | | 194 | | | |
| | Use of SF6 in the Utility Industry | 138 | | | | | 138 |
| | Industrial Processes | | | | | | |
| | Cement Production | - | - | - | - | | |
| | Iron and Steel Production | - | - | - | - | | |
| | Ferroalloy Production | - | - | - | - | | |
| Aluminum Production | - | - | - | - | | | |

REDC GHG Emissions Roll Up Report

Year: 2010

(all emissions in Column D, when summed will equal the total County or REDC protocol compliant GHG emissions estimate)

REDC / County Name **Hamilton**

Color Code

REQUIRED for the Roll Up Report, though some data may be zero, N/A, or considered to small to count
 Report NO Data in cell

| DRAFT Roll Up Report CGC. Emissions in MTCDE | | | | | | | | |
|--|--|-------------------------------|---------|-------|-----|-----|-------|-----|
| | | CO2e | CO2 | CH4 | N2O | PFC | HFC | SF6 |
| Paper and Pulp | Paper and Pulp | - | | | | | | |
| | Limestone Use | - | | | | | | |
| | Soda Ash Use | - | | | | | | |
| | Semi-Conductor Manufacturing | - | | | | | | |
| | Chemical Manufacturing | - | | | | | | |
| | Product Use (ODS Substitutes) | - | | | | | | |
| | All Refrigerants- except utility SF6 | 1,107 | | | | | 1,107 | |
| Transportation Energy | On-road: ALL (Total not ethanol) | | | | | | | |
| | Motor Gasoline (E-10) | 35,295 | 35,170 | 93 | 32 | | | |
| | Diesel | 8,154 | 8,131 | 17 | 7 | | | |
| | Ethanol | - | | | | | | |
| | Biodiesel | - | | | | | | |
| | Rail | | | | | | | |
| | Diesel | 29 | 29 | 0 | 0 | | | |
| | Electricity Consumption | - | | | | | | |
| | Marine | | | | | | | |
| | Gasoline | - | | | | | | |
| | Distillate | - | | | | | | |
| | Residual Fuel Oil | - | | | | | | |
| | Off-road Mobile | | | | | | | |
| | All Fuels (Diesel and Gasoline) | 99,802 | 99,450 | 263 | 89 | | | |
| | Waste Management | Solid Waste Management | | | | | | |
| Landfill Methane and Combustion | | 2,426 | 3 | 2,423 | 0 | | | |
| MSW incineration (non grid connected) | | - | | | | | | |
| Sewage Treatment | | | | | | | | |
| Central WWTPs and Septic Systems | 100 | | 75 | 25 | | | | |
| Agriculture | Livestock | | | | | | | |
| | Enteric Fermentation | 19 | | 19 | | | | |
| | Manure management | 1 | | 1 | 0 | | | |
| | Crop Production and Soil Management | | | | | | | |
| | Use of Fertilizer | 7 | | | 7 | | | |
| | Crop Residue Incineration | - | | | | | | |
| Grand Totals | | 178,906 | 173,774 | 3,287 | 600 | - | 1,107 | 138 |

Jefferson Emissions

REDC Emissions By Source and Sector
Year: 2010

REDC / County Name: Jefferson

Color Code
 [Green] REQUIRED, though some data may be zero or considered small to count
 [White] OPTIONAL
 [Hatched] DO NOT Report Data in these cells

| DRAFT Reporting Template CGC. Emissions in MTCDE | | | | | Rolled Up? | Related GHG Metrics / Activity Data | | |
|--|---------|---------|---------|----------|------------|-------------------------------------|-------|-----------|
| | Scope 1 | Scope 2 | Scope 3 | Biogenic | | Metric | Unit | Value |
| Built Environment | | | | | | | | |
| NC Electricity Consumption | | 64,472 | | | Yes | Consumption | MMBTU | 969,244 |
| NC Direct Residential Fuel Consumption | 120,792 | | | | Yes | Consumption | MMBTU | 2,275,993 |
| NC Direct Residential Fuel Consumption | 33,430 | | | | Yes | Consumption | MMBTU | 528,711 |
| NC Direct Residential Fuel Consumption | 53,496 | | | | Yes | Consumption | MMBTU | 720,878 |
| NC Direct Residential Fuel Consumption | 2,137 | | | 2,137 | Yes | Consumption | MMBTU | 1,082,607 |
| Commercial Energy Consumption | | | | | | | | |
| NC Electricity Consumption | | 35,171 | | | Yes | Consumption | MMBTU | 528,745 |
| NC Commercial Direct Fuel Consumption | 80,706 | | | | Yes | Consumption | MMBTU | 1,520,698 |
| NC Commercial Direct Fuel Consumption | 10,826 | | | | Yes | Consumption | MMBTU | 171,221 |
| NC Commercial Direct Fuel Consumption | 42,555 | | | | Yes | Consumption | MMBTU | 573,451 |
| NC Commercial Direct Fuel Consumption | | | | | Yes | Consumption | MMBTU | |
| NC Commercial Direct Fuel Consumption | 91 | | | | Yes | Consumption | MMBTU | 885 |
| NC Commercial Direct Fuel Consumption | 601 | | | 28,573 | Yes | Consumption | MMBTU | 304,611 |
| Industrial Energy Consumption | | | | | | | | |
| NC Electricity Consumption | | 77,665 | | | Yes | Consumption | MMBTU | 1,167,571 |
| Energy Generation and Supply | | | | | | | | |
| NC Industrial Title V Consumption | 10,015 | | | | Yes | Consumption | MMBTU | 188,700 |
| NC Industrial Title V Consumption | - | | | | Yes | Consumption | MMBTU | - |
| NC Industrial Title V Consumption | - | | | | Yes | Consumption | MMBTU | - |
| NC Industrial Title V Consumption | - | | | | Yes | Consumption | MMBTU | - |
| NC Industrial Title V Consumption | - | | | | Yes | Consumption | MMBTU | - |
| NC Industrial Title V Consumption | - | | | | Yes | Consumption | MMBTU | - |
| NC Elec Generation GHG Analysis | 106,709 | | | | No | Consumption | MMBTU | 1,111,229 |
| NC Elec Generation GHG Analysis | 6,411 | | | | No | Consumption | MMBTU | 120,803 |
| NC Elec Generation GHG Analysis | 380 | | | | No | Consumption | MMBTU | 5,126 |
| NC Elec Generation GHG Analysis | - | | | | No | Consumption | MMBTU | - |
| NC Elec Generation GHG Analysis | - | | | | No | Consumption | MMBTU | - |

**REDC Emissions By Source and Sector
Year: 2010**

REDC / County Name **Jefferson**

Color Code

REQUIRED, though some data may be zero or considered to small to count
OPTIONAL
DO NOT Report Data in these cells

| DRAFT Reporting Template CGC. Emissions in MTCDE | | | | | Rolled Up? | Related GHG Metrics / Activity Data | | | |
|--|---|---------|---------|---------|------------|-------------------------------------|---------------|-------|-----------|
| | | Scope 1 | Scope 2 | Scope 3 | | Biogenic | Metric | Unit | Value |
| NC Elec Generation GHG Analysis | MSW and landfill emissions | 107 | | | 21,232 | | MSW Combusted | MMBTU | 407,752 |
| NC Elec Generation GHG Analysis | Other | 2,978 | | | | | | | 33,859 |
| NC Elec Generation GHG Analysis | Electricity T/D Losses | | 10,319 | | | Yes | Losses | MMBTU | 155,136 |
| NC Elec Generation GHG Analysis and NC Direct Fuel Consumption | Natural Gas T/D Losses | 30,712 | | | | Yes | Losses | MMBTU | |
| NC Electricity Consumption | Use of SF6 in the Utility Industry | 2,373 | | | | Yes | Consumption | MMBTU | |
| Industrial Processes | Industrial Processes | | | | | | | | |
| Not Reported | Cement Production | | | | | Yes | | | |
| NC Industrial Sources | Iron and Steel Production | | | | | Yes | | | |
| NC Industrial Sources | Ferroalloy Production | | | | | Yes | | | |
| Not Reported | Aluminum Production | | | | | Yes | | | |
| Not Reported | Paper and Pulp | | | | | Yes | | | |
| Not Reported | Limestone Use | | | | | Yes | | | |
| Not Reported | Soda Ash Use | | | | | Yes | | | |
| Not Reported | Semi-Conductor Manufacturing | | | | | Yes | | | |
| Not Reported | Glass Production | | | | | Yes | | | |
| Not Reported | Chemical Manufacturing | | | | | Yes | | | |
| Product Use (Ozone Depleting Substances) | Product Use (Ozone Depleting Substances) | | | | | | | | |
| NC Industrial Sources | All Refrigerants- except SF6 | 26,611 | | | | Yes | | | |
| Transportation Energy | On-road | | | | | | | | |
| NC Emission Summary - Onroad | Motor Gasoline (E-10) | 418,440 | | | 30,369 | Yes | Consumption | MMBTU | 6,381,302 |
| NC Emission Summary - Onroad | Diesel | 129,875 | | | | Yes | Consumption | MMBTU | 1,750,127 |
| Not Reported | Ethanol (E-85) | | | | | No | Consumption | MMBTU | |
| Not Reported | Biodiesel | | | | | No | Consumption | MMBTU | |
| Not Reported | Electricity Consumption | | | | | No | Consumption | MMBTU | |

REDC Emissions By Source and Sector
Year: 2010

REDC / County Name **Jefferson**

Color Code
 REQUIRED, though some data may be zero or considered to small to count
 OPTIONAL
 DO NOT Report Data in these cells

| DRAFT Reporting Template CGC. Emissions in MTCDE | | | | | Rolled Up? | Related GHG Metrics / Activity Data | | |
|--|---|------------|---------|---------|------------|-------------------------------------|--------|-----------|
| | | Scope 1 | Scope 2 | Scope 3 | | Biogenic | Metric | Unit |
| NC Emission Summary - Rail | Rail | 22,068 | | | | | | |
| | Diesel | | | | | Consumption | MMBTU | 297,383 |
| NC Emission Summary - Rail | Electricity Consumption | | | | | Consumption | MMBTU | |
| | Marine | | | | | | | |
| NC Emission Summary -Com Marine | Gasoline | | | | | Consumption | MMBTU | |
| NC Emission Summary -Com Marine | Distillate Fuels | 15,673 | | | | Consumption | MMBTU | 211,203 |
| NC Emission Summary -Com Marine | Residual Fuels | 15,672 | | | | Consumption | MMBTU | 207,997 |
| | Air | | | | | | | |
| NC Emission Summary-Aircraft | All Fuels (Jet and Aviation Gasoline) | 7,107 | | | | Consumption | MMBTU | 99,548 |
| | Non-road Mobile | | | | | | | |
| NC Emission Summary-Nonroad | All Fuels (Diesel and Gasoline) | 128,777 | | | | Consumption | MMBTU | 1,792,552 |
| Waste Management | Solid Waste Management | | | | | | | |
| NC Waste | Landfill Methane and Combustion | - | | 30,721 | | MSW+CD Generated | Tonnes | 100,486 |
| Not Reported | MSW incineration (non grid connected) | | | | | MSW+CD Processed | Tonnes | 192,131 |
| | Sewage Treatment | | | | | MSW Sent for Incineration | Tonnes | |
| NC Waste water | Central WWTPs and Septic Systems | 11,379 | | | | MSW incinerated in Boundary | Tonnes | |
| | Livestock | | | | | | | |
| GHG_NC_Agriculture | Enteric Fermentation | 127,471 | | | | | | |
| GHG_NC_Agriculture | Manure management | 26,131 | | | | | | |
| | Crop Production and Soil Management | | | | | | | |
| GHG_NC_Agriculture | Use of Fertilizer | 9,022 | | | | | | |
| Not Reported | Crop Residue Incineration | | | | | | | |
| | Land Use and Forestry | | | | | | | |
| GHG_NC_Forest | Urban Forest Annual Reserve | 61,989 | | | | | | |
| GHG_NC_Forest | Forest Carbon Reserve (TOTAL) | 73,072,453 | | | | | | |
| Grand Totals | Gross Totals | 1,318,856 | 187,628 | 30,721 | | | | 1,537,205 |
| | Total with Aircraft (as reported in NC Sustainability Plan) | 1,325,962 | 187,628 | 30,721 | | | | 1,544,312 |
| | Net Totals | | | | | | | |

Jefferson Roll Up

REDC GHG Emissions Roll Up Report

Year: 2010

(all emissions in Column D, when summed will equal the total County or REDC protocol compliant GHG emissions estimate)

REDC / County Name **Jefferson**

Color Code

REDC REQUIRED for the Roll Up Report, though some data may be zero, N/A, or considered to small to count
NO DATA Report NO Data in cell

| DRAFT Roll Up Report CGC. Emissions in MTCDE | | | | | | | | |
|--|--|---------|---------|--------|-------|-----|-----|-------|
| | | CO2e | CO2 | CH4 | N2O | PFC | HFC | SF6 |
| Built Environment | Residential Energy Consumption | | | | | | | |
| | Electricity / Steam | 64,472 | 64,159 | 43 | 270 | | | |
| | Natural Gas | 120,792 | 120,673 | 48 | 71 | | | |
| | Propane / LPG | 33,430 | 33,298 | 33 | 98 | | | |
| | Distillate Fuel Oil (#1, #2, Kerosene) | 53,496 | 53,316 | 45 | 134 | | | |
| | Wood | 2,137 | - | 728 | 1,410 | | | |
| | Commercial Energy Consumption | | | | | | | |
| | Electricity / Steam | 35,171 | 35,000 | 24 | 148 | | | |
| | Natural Gas | 80,706 | 80,627 | 32 | 47 | | | |
| | Propane / LPG | 10,826 | 10,783 | 11 | 32 | | | |
| | Distillate Fuel Oil (#1, #2, Kerosene) | 42,555 | 42,412 | 36 | 107 | | | |
| | Residual Fuel Oil (#4 and #6) | - | - | - | - | | | |
| | Coal | 91 | 90 | 0 | 0 | | | |
| | Wood | 601 | - | 205 | 397 | | | |
| | Industrial Energy Consumption | | | | | | | |
| | Electricity / Steam | 77,665 | 77,287 | 52 | 326 | | | |
| | Natural Gas | 10,015 | 10,005 | 4 | 6 | | | |
| | Propane / LPG | - | - | - | - | | | |
| | Distillate Fuel Oil (#1, #2, Kerosene) | - | - | - | - | | | |
| | Residual Fuel Oil (#4 and #6) | - | - | - | - | | | |
| | Coal | - | - | - | - | | | |
| | Wood | - | - | - | - | | | |
| | Energy Generation and Supply | | | | | | | |
| | Electricity T/D Losses | 10,319 | 10,269 | 7 | 43 | | | |
| | Natural Gas T/D Losses | 30,712 | | 30,712 | | | | |
| | Use of SF6 in the Utility Industry | 2,373 | | | | | | 2,373 |
| | Industrial Processes | | | | | | | |
| Cement Production | - | | | | | | | |
| Iron and Steel Production | - | | | | | | | |

REDC GHG Emissions Roll Up Report

Year: 2010

(all emissions in Column D, when summed will equal the total County or REDC protocol compliant GHG emissions estimate)

REDC / County Name **Jefferson**

Color Code

REQUIRED for the Roll Up Report, though some data may be zero, N/A, or considered to small to count
 Report NO Data in cell

| DRAFT Roll Up Report CGC. Emissions in MTCDE | | CO2e | CO2 | CH4 | N2O | PFC | HFC | SF6 |
|--|--|--|------------------|----------------|---------------|----------|---------------|--------------|
| Ferroalloy Production | Ferroalloy Production | - | - | - | - | - | - | - |
| | Aluminum Production | - | - | - | - | - | - | - |
| | Paper and Pulp | - | - | - | - | - | - | - |
| | Limestone Use | - | - | - | - | - | - | - |
| | Soda Ash Use | - | - | - | - | - | - | - |
| | Semi-Conductor Manufacturing | - | - | - | - | - | - | - |
| | Chemical Manufacturing | - | - | - | - | - | - | - |
| | Product Use (ODS Substitutes) | - | - | - | - | - | - | - |
| | All Refrigerants- except utility SF6 | 26,611 | - | - | - | - | 26,611 | - |
| | Transportation Energy | On-road: ALL(Total not ethanol) | - | - | - | - | - | - |
| | Motor Gasoline (E-10) | 418,440 | 416,962 | 1,104 | 374 | - | - | - |
| | Diesel | 129,875 | 129,439 | 326 | 110 | - | - | - |
| | Ethanol | - | - | - | - | - | - | - |
| | Biodiesel | - | - | - | - | - | - | - |
| | Rail | - | - | - | - | - | - | - |
| | Diesel | 22,068 | 21,994 | 55 | 19 | - | - | - |
| | Electricity Consumption | - | - | - | - | - | - | - |
| | Marine | - | - | - | - | - | - | - |
| | Gasoline | - | - | - | - | - | - | - |
| | Distillate | 15,673 | 15,621 | 39 | 13 | - | - | - |
| | Residual Fuel Oil | 15,672 | 15,621 | 39 | 13 | - | - | - |
| | Off-road Mobile | - | - | - | - | - | - | - |
| | All Fuels (Diesel and Gasoline) | 128,777 | 128,332 | 333 | 113 | - | - | - |
| Waste Management | Solid Waste Management | - | - | - | - | - | - | - |
| | Landfill Methane and Combustion | 30,721 | 42 | 30,679 | 0 | - | - | - |
| | MSW incineration (non grid connected) | - | - | - | - | - | - | - |
| | Sewage Treatment | - | - | - | - | - | - | - |
| | Central WWTPs and Septic Systems | 11,379 | - | 8,534 | 2,845 | - | - | - |
| Agriculture | Livestock | - | - | - | - | - | - | - |
| | Enteric Fermentation | 127,471 | - | 127,471 | - | - | - | - |
| | Manure management | 26,132 | - | 21,610 | 4,522 | - | - | - |
| | Crop Production and Soil Management | - | - | - | - | - | - | - |
| | Use of Fertilizer | 9,022 | - | - | 9,022 | - | - | - |
| | Crop Residue Incineration | - | - | - | - | - | - | - |
| Grand Totals | | 1,537,205 | 1,265,932 | 222,169 | 20,119 | - | 26,611 | 2,373 |

Lewis Emissions

REDC Emissions By Source and Sector
Year: 2010

REDC / County Name: **Lewis**

Color Code
 [Green Box] REQUIRED, though some data may be zero or considered small to count
 [White Box] OPTIONAL
 [Hatched Box] DO NOT Report Data in these cells

| DRAFT Reporting Template CGC. Emissions in MTCDE | | | | | | Related GHG Metrics / Activity Data | | | |
|--|--|---------|---------|---------|----------|-------------------------------------|-------------|-------|-----------|
| | | Scope 1 | Scope 2 | Scope 3 | Biogenic | Rolled Up? | Metric | Unit | Value |
| Built Environment | | | | | | | | | |
| Residential Energy Consumption | | | | | | | | | |
| NC Electricity Consumption | Electricity / Steam | | 18,048 | | | Yes | Consumption | MMBTU | 271,318 |
| NC Direct Residential Fuel Consumption | Natural Gas | 8,806 | | | | Yes | Consumption | MMBTU | 165,927 |
| NC Direct Residential Fuel Consumption | Propane / LPG | 10,329 | | | | Yes | Consumption | MMBTU | 163,366 |
| NC Direct Residential Fuel Consumption | Distillate Fuel Oil (#1, #2, Kerosene) | 35,941 | | | | Yes | Consumption | MMBTU | 484,316 |
| NC Direct Residential Fuel Consumption | Wood | 2,829 | | | 2,829 | Yes | Consumption | MMBTU | 1,433,067 |
| Commercial Energy Consumption | | | | | | | | | |
| NC Electricity Consumption | Electricity / Steam | | 5,608 | | | Yes | Consumption | MMBTU | 84,312 |
| NC Commercial Direct Fuel Consumption | Natural Gas | 21,467 | | | | Yes | Consumption | MMBTU | 404,479 |
| NC Commercial Direct Fuel Consumption | Propane / LPG | 12,205 | | | | Yes | Consumption | MMBTU | 193,022 |
| NC Commercial Direct Fuel Consumption | Distillate Fuel Oil (#1, #2, Kerosene) | 104,310 | | | | Yes | Consumption | MMBTU | 1,405,626 |
| NC Commercial Direct Fuel Consumption | Residual Fuel Oil (#4 and #6) | | | | | Yes | Consumption | MMBTU | |
| NC Commercial Direct Fuel Consumption | Coal | 52 | | | | Yes | Consumption | MMBTU | 503 |
| NC Commercial Direct Fuel Consumption | Wood | 2,904 | | | 137,991 | Yes | Consumption | MMBTU | 1,471,120 |
| Industrial Energy Consumption | | | | | | | | | |
| NC Electricity Consumption | Electricity / Steam | | 15,627 | | | Yes | Consumption | MMBTU | 234,927 |
| NC Industrial Title V Consumption | Natural Gas | 47,556 | | | | Yes | Consumption | MMBTU | 896,059 |
| NC Industrial Title V Consumption | Propane / LPG | 1,405 | | | | Yes | Consumption | MMBTU | 22,224 |
| NC Industrial Title V Consumption | Distillate Fuel Oil (#1, #2, Kerosene) | 173 | | | | Yes | Consumption | MMBTU | 2,327 |
| NC Industrial Title V Consumption | Residual Fuel Oil (#4 and #6) | 15 | | | | Yes | Consumption | MMBTU | 200 |
| NC Industrial Title V Consumption | Coal | | | | | Yes | Consumption | MMBTU | |
| NC Industrial Title V Consumption | Wood | | | | | Yes | Consumption | MMBTU | |

**REDC Emissions By Source and Sector
Year: 2010**

REDC / County Name **Lewis**

Color Code

REQUIRED, though some data may be zero or considered to small to count
 OPTIONAL
 DO NOT Report Data in these cells

| DRAFT Reporting Template CGC. Emissions in MTCDE | | | | | Rolled Up? | Related GHG Metrics / Activity Data | | | |
|--|---|---------|---------|---------|------------|-------------------------------------|---------------|-------|--------|
| | | Scope 1 | Scope 2 | Scope 3 | | Biogenic | Metric | Unit | Value |
| Energy Generation and Supply | Energy Generation and Supply | | | | | | | | |
| NC Elec Generation GHG Analysis | Coal and Coke | - | | | | No | Consumption | MMBTU | - |
| NC Elec Generation GHG Analysis | Natural Gas | 1,697 | | | | No | Consumption | MMBTU | 31,974 |
| NC Elec Generation GHG Analysis | Distillate Fuel Oil (#1, #2 and #4) | 462 | | | | No | Consumption | MMBTU | 6,222 |
| NC Elec Generation GHG Analysis | Residual Fuel Oil (#4 and #6) | - | | | | No | Consumption | MMBTU | - |
| NC Elec Generation GHG Analysis | Wood / Biomass | - | | | | No | Consumption | MMBTU | - |
| NC Elec Generation GHG Analysis | MSW and landfill emissions | - | | | | No | MSW Combusted | MMBTU | - |
| NC Elec Generation GHG Analysis | Other | - | | | | | | | |
| NC Elec Generation GHG Analysis | Electricity T/D Losses | | 2,286 | | | Yes | Losses | MMBTU | 34,370 |
| NC Elec Generation GHG Analysis and NC Direct Fuel Consumption | Natural Gas T/D Losses | 11,148 | | | | Yes | Losses | MMBTU | |
| NC Electricity Consumption | Use of SF6 in the Utility Industry | 526 | | | | Yes | Consumption | MMBTU | |
| Industrial Processes | Industrial Processes | | | | | | | | |
| Not Reported | Cement Production | | | | | Yes | | | |
| NC Industrial Sources | Iron and Steel Production | | | | | Yes | | | |
| NC Industrial Sources | Ferroalloy Production | | | | | Yes | | | |
| Not Reported | Aluminum Production | | | | | Yes | | | |
| Not Reported | Paper and Pulp | | | | | Yes | | | |
| Not Reported | Limestone Use | | | | | Yes | | | |
| Not Reported | Soda Ash Use | | | | | Yes | | | |
| Not Reported | Semi-Conductor Manufacturing | | | | | Yes | | | |
| Not Reported | Glass Production | | | | | Yes | | | |
| Not Reported | Chemical Manufacturing | | | | | Yes | | | |
| Product Use (Ozone Depleting Substances) | Product Use (Ozone Depleting Substances) | | | | | | | | |
| NC Industrial Sources | All Refrigerants- except SF6 | 6,202 | | | | Yes | | | |

REDC Emissions By Source and Sector
Year: 2010

REDC / County Name **Lewis**

Color Code
 REQUIRED, though some data may be zero or considered to small to count
 OPTIONAL
 DO NOT Report Data in these cells

| DRAFT Reporting Template CGC. Emissions in MTCDE | | | | | Rolled Up? | Related GHG Metrics / Activity Data | | |
|--|---|-------------|---------|---------|------------|-------------------------------------|--------|-----------|
| | | Scope 1 | Scope 2 | Scope 3 | | Bioeonic | Metric | Unit |
| Transportation Energy | On-road | | | | | | | |
| NC Emission Summary - Onroad | Motor Gasoline (E-10) | 94,918 | | | 6,889 | Consumption | MMBTU | 1,447,513 |
| NC Emission Summary - Onroad | Diesel | 22,257 | | | | Consumption | MMBTU | 299,927 |
| Not Reported | Ethanol (E-85) | | | | | Consumption | MMBTU | |
| Not Reported | Biodiesel | | | | | Consumption | MMBTU | |
| Not Reported | Electricity Consumption | | | | | Consumption | MMBTU | |
| | Rail | | | | | | | |
| NC Emission Summary - Rail | Diesel | 663 | | | | Consumption | MMBTU | 8,933 |
| NC Emission Summary - Rail | Electricity Consumption | | | | | Consumption | MMBTU | |
| | Marine | | | | | | | |
| NC Emission Summary -Com Marine | Gasoline | | | | | Consumption | MMBTU | |
| NC Emission Summary -Com Marine | Distillate Fuels | | | | | Consumption | MMBTU | |
| NC Emission Summary -Com Marine | Residual Fuels | | | | | Consumption | MMBTU | |
| | Air | | | | | | | |
| NC Emission Summary-Aircraft | All Fuels (Jet and Aviation Gasoline) | 145 | | | | Consumption | MMBTU | 2,041 |
| | Non-road Mobile | | | | | | | |
| NC Emission Summary-Nonroad | All Fuels (Diesel and Gasoline) | 40,967 | | | | Consumption | MMBTU | 570,662 |
| Waste Management | Solid Waste Management | | | | | | | |
| NC Waste | Landfill Methane and Combustion | 45,286 | | 5,039 | | MSW+CD Generated | Tonnes | 16,483 |
| Not Reported | MSW incineration (non grid connected) | | | | | MSW+CD Processed | Tonnes | |
| | Sewage Treatment | | | | | | | |
| NC Waste water | Central WWTPs and Septic Systems | 707 | | | | MSW Sent for Incineration | Tonnes | |
| | | | | | | MSW incinerated in Boundary | Tonnes | |
| Agriculture | Livestock | | | | | | | |
| GHG_NC_Agriculture | Enteric Fermentation | 106,643 | | | | | | |
| GHG_NC_Agriculture | Manure management | 23,249 | | | | | | |
| | Crop Production and Soil Management | | | | | | | |
| GHG_NC_Agriculture | Use of Fertilizer | 5,068 | | | | | | |
| Not Reported | Crop Residue Incineration | | | | | | | |
| Land Use and Forestry | | | | | | | | |
| GHG_NC_Forest | Urban Forest Annual Reserve | 2,858 | | | | | | |
| GHG_NC_Forest | Forest Carbon Reserve (TOTAL) | 121,776,510 | | | | | | |
| Grand Totals | Gross Totals | 560,340 | 41,569 | 5,039 | | | | 606,948 |
| | Total with Aircraft (as reported in NC Sustainability Plan) | 560,484 | 41,569 | 5,039 | | | | 607,093 |
| | Net Totals | | | | | | | |

Lewis Roll Up

REDC GHG Emissions Roll Up Report

Year: 2010

(all emissions in Column D, when summed will equal the total County or REDC protocol compliant GHG emissions estimate)

REDC / County Name **Lewis**

Color Code

REDC REQUIRED for the Roll Up Report, though some data may be zero, N/A, or considered to small to count
NO DATA Report NO Data in cell

| DRAFT Roll Up Report CGC. Emissions in MTCDE | | | | | | | |
|--|--|---------|---------|--------|-------|-----|-----|
| | | CO2e | CO2 | CH4 | N2O | PFC | SF6 |
| Built Environment | Residential Energy Consumption | | | | | | |
| | Electricity / Steam | 18,048 | 17,960 | 12 | 76 | | |
| | Natural Gas | 8,806 | 8,797 | 3 | 5 | | |
| | Propane / LPG | 10,329 | 10,289 | 10 | 30 | | |
| | Distillate Fuel Oil (#1, #2, Kerosene) | 35,941 | 35,820 | 31 | 90 | | |
| | Wood | 2,829 | - | 963 | 1,866 | | |
| | Commercial Energy Consumption | | | | | | |
| | Electricity / Steam | 5,608 | 5,581 | 4 | 24 | | |
| | Natural Gas | 21,467 | 21,446 | 8 | 13 | | |
| | Propane / LPG | 12,205 | 12,157 | 12 | 36 | | |
| | Distillate Fuel Oil (#1, #2, Kerosene) | 104,310 | 103,960 | 89 | 261 | | |
| | Residual Fuel Oil (#4 and #6) | - | | | | | |
| | Coal | 52 | 51 | 0 | 0 | | |
| | Wood | 2,904 | - | 989 | 1,915 | | |
| | Industrial Energy Consumption | | | | | | |
| | Electricity / Steam | 15,627 | 15,551 | 10 | 66 | | |
| | Natural Gas | 47,556 | 47,509 | 19 | 28 | | |
| | Propane / LPG | 1,405 | 1,400 | 1 | 4 | | |
| | Distillate Fuel Oil (#1, #2, Kerosene) | 173 | 172 | 0 | 0 | | |
| | Residual Fuel Oil (#4 and #6) | 15 | 15 | 0 | 0 | | |
| | Coal | - | | | | | |
| | Wood | - | | - | - | | |
| | Energy Generation and Supply | | | | | | |
| | Electricity T/D Losses | 2,286 | 2,275 | 2 | 10 | | |
| | Natural Gas T/D Losses | 11,148 | | 11,148 | | | |
| | Use of SF6 in the Utility Industry | 526 | | | | | 526 |
| | Industrial Processes | | | | | | |
| | Cement Production | - | | | | | |
| | Iron and Steel Production | - | | | | | |
| | Ferrous Alloy Production | - | | | | | |

REDC GHG Emissions Roll Up Report

Year: 2010

(all emissions in Column D, when summed will equal the total County or REDC protocol compliant GHG emissions estimate)

REDC / County Name **Lewis**

Color Code

REQUIRED for the Roll Up Report, though some data may be zero, N/A, or considered to small to count
 Report NO Data in cell

| DRAFT Roll Up Report CGC. Emissions in MTCDE | | | | | | | | |
|--|--|----------------|----------------|----------------|---------------|----------|--------------|------------|
| | | CO2e | CO2 | CH4 | N2O | PFC | HFC | SF6 |
| Manufacturing | Aluminum Production | - | - | | | - | | |
| | Paper and Pulp | - | | | | | | |
| | Limestone Use | - | | | | | | |
| | Soda Ash Use | - | | | | | | |
| | Semi-Conductor Manufacturing | - | | | | | | |
| | Chemical Manufacturing | - | | | | | | |
| | Product Use (ODS Substitutes) | - | | | | | | |
| | All Refrigerants- except utility SF6 | 6,202 | | | | | 6,202 | |
| Transportation Energy | On-road: ALL (Total not ethanol) | | | | | | | |
| | Motor Gasoline (E-10) | 94,918 | 94,582 | 251 | 85 | | | |
| | Diesel | 22,257 | 22,183 | 56 | 19 | | | |
| | Ethanol | - | | | | | | |
| | Biodiesel | - | | | | | | |
| | Rail | | | | | | | |
| | Diesel | 663 | 661 | 2 | 1 | | | |
| | Electricity Consumption | - | | | | | | |
| | Marine | | | | | | | |
| | Gasoline | - | | | | | | |
| | Distillate | - | - | - | - | | | |
| | Residual Fuel Oil | - | - | - | - | | | |
| | Off-road Mobile | | | | | | | |
| | All Fuels (Diesel and Gasoline) | 40,967 | 40,825 | 106 | 36 | | | |
| Waste Management | Solid Waste Management | | | | | | | |
| | Landfill Methane and Combustion | 5,039 | 7 | 5,032 | 0 | | | |
| | MSW incineration (non grid connected) | - | | | | | | |
| | Sewage Treatment | | | | | | | |
| | Central WWTPs and Septic Systems | 707 | | 530 | 177 | | | |
| Agriculture | Livestock | | | | | | | |
| | Enteric Fermentation | 106,645 | | 106,645 | | | | |
| | Manure management | 23,249 | | 19,171 | 4,078 | | | |
| | Crop Production and Soil Management | | | | | | | |
| | Use of Fertilizer | 5,068 | | | 5,068 | | | |
| | Crop Residue Incineration | - | | | | | | |
| Grand Totals | | 606,948 | 441,240 | 145,094 | 13,887 | - | 6,202 | 526 |

St. Lawrence Emissions

REDC Emissions By Source and Sector
Year: 2010

REDC / County Name: St Lawrence

Color Code
 REQUIRED, though some data may be zero or considered small to count
 OPTIONAL
 DO NOT Report Data in these cells

| DRAFT Reporting Template CGC. Emissions in MTCDE | | | | | | Related GHG Metrics / Activity Data | | | |
|--|--|---------|---------|---------|----------|-------------------------------------|-------------|-------|-----------|
| | | Scope 1 | Scope 2 | Scope 3 | Biogenic | Rolled Up? | Metric | Unit | Value |
| Built Environment | | | | | | | | | |
| Residential Energy Consumption | | | | | | | | | |
| NC Electricity Consumption | Electricity / Steam | | 78,430 | | | Yes | Consumption | MMBTU | 1,179,076 |
| NC Direct Residential Fuel Consumption | Natural Gas | 117,424 | | | | Yes | Consumption | MMBTU | 2,212,546 |
| NC Direct Residential Fuel Consumption | Propane / LPG | 24,171 | | | | Yes | Consumption | MMBTU | 382,275 |
| NC Direct Residential Fuel Consumption | Distillate Fuel Oil (#1, #2, Kerosene) | 99,390 | | | | Yes | Consumption | MMBTU | 1,339,327 |
| NC Direct Residential Fuel Consumption | Wood | 4,903 | | | 4,903 | Yes | Consumption | MMBTU | 2,483,746 |
| Commercial Energy Consumption | | | | | | | | | |
| NC Electricity Consumption | Electricity / Steam | | 25,968 | | | Yes | Consumption | MMBTU | 390,393 |
| NC Commercial Direct Fuel Consumption | Natural Gas | 76,042 | | | | Yes | Consumption | MMBTU | 1,432,815 |
| NC Commercial Direct Fuel Consumption | Propane / LPG | 7,587 | | | | Yes | Consumption | MMBTU | 119,988 |
| NC Commercial Direct Fuel Consumption | Distillate Fuel Oil (#1, #2, Kerosene) | 76,631 | | | | Yes | Consumption | MMBTU | 1,032,636 |
| NC Commercial Direct Fuel Consumption | Residual Fuel Oil (#4 and #6) | | | | | Yes | Consumption | MMBTU | |
| NC Commercial Direct Fuel Consumption | Coal | 22 | | | | Yes | Consumption | MMBTU | 213 |
| NC Commercial Direct Fuel Consumption | Wood | 1,337 | | | 63,535 | Yes | Consumption | MMBTU | 677,342 |
| Industrial Energy Consumption | | | | | | | | | |
| NC Electricity Consumption | Electricity / Steam | | 58,733 | | | Yes | Consumption | MMBTU | 882,965 |
| NC Industrial Title V Consumption | Natural Gas | 95,780 | | | | Yes | Consumption | MMBTU | 1,804,711 |
| NC Industrial Title V Consumption | Propane / LPG | 75 | | | | Yes | Consumption | MMBTU | 1,193 |
| NC Industrial Title V Consumption | Distillate Fuel Oil (#1, #2, Kerosene) | 19 | | | | Yes | Consumption | MMBTU | 257 |
| NC Industrial Title V Consumption | Residual Fuel Oil (#4 and #6) | 26,164 | | | | Yes | Consumption | MMBTU | 347,235 |
| NC Industrial Title V Consumption | Coal | | | | | Yes | Consumption | MMBTU | |
| NC Industrial Title V Consumption | Wood | | | | | Yes | Consumption | MMBTU | |

**REDC Emissions By Source and Sector
Year: 2010**

REDC / County Name **St Lawrence**

Color Code

REQUIRED, though some data may be zero or considered to small to count
 OPTIONAL
 DO NOT Report Data in these cells

| DRAFT Reporting Template CGC. Emissions in MTCDE | | | | | Rolled Up? | Related GHG Metrics / Activity Data | | |
|--|---|---------|---------|----------|------------|-------------------------------------|-------|---------|
| | Scope 1 | Scope 2 | Scope 3 | Biogenic | | Metric | Unit | Value |
| Energy Generation and Supply | Energy Generation and Supply | | | | | | | |
| NC Elec Generation GHG Analysis | Coal and Coke | - | | | No | Consumption | MMBTU | - |
| NC Elec Generation GHG Analysis | Natural Gas | 2,996 | | | No | Consumption | MMBTU | 56,452 |
| NC Elec Generation GHG Analysis | Distillate Fuel Oil (#1, #2 and #4) | 26 | | | No | Consumption | MMBTU | 354 |
| NC Elec Generation GHG Analysis | Residual Fuel Oil (#4 and #6) | - | | | No | Consumption | MMBTU | - |
| NC Elec Generation GHG Analysis | Wood / Biomass | - | | | No | Consumption | MMBTU | - |
| NC Elec Generation GHG Analysis | MSW and landfill emissions | - | | - | No | MSW Combusted | MMBTU | - |
| NC Elec Generation GHG Analysis | Other | - | | | | | | - |
| NC Elec Generation GHG Analysis | Electricity T/D Losses | | 9,494 | | Yes | Losses | MMBTU | 142,732 |
| NC Elec Generation GHG Analysis and NC Direct Fuel Consumption | Natural Gas T/D Losses | 41,154 | | | Yes | Losses | MMBTU | |
| NC Electricity Consumption | Use of SF6 in the Utility Industry | 2,184 | | | Yes | Consumption | MMBTU | |
| Industrial Processes | Industrial Processes | | | | | | | |
| Not Reported | Cement Production | | | | Yes | | | |
| NC Industrial Sources | Iron and Steel Production | | | | Yes | | | |
| NC Industrial Sources | Ferroalloy Production | | | | Yes | | | |
| Not Reported | Aluminum Production | 234,165 | | | Yes | | | |
| Not Reported | Paper and Pulp | | | | Yes | | | |
| Not Reported | Limestone Use | | | | Yes | | | |
| Not Reported | Soda Ash Use | | | | Yes | | | |
| Not Reported | Semi-Conductor Manufacturing | | | | Yes | | | |
| Not Reported | Glass Production | | | | Yes | | | |
| Not Reported | Chemical Manufacturing | | | | Yes | | | |
| Product Use (Ozone Depleting Substances) | Product Use (Ozone Depleting Substances) | | | | | | | |
| NC Industrial Sources | All Refrigerants- except SF6 | 25,630 | | | Yes | | | |

St. Lawrence
Roll Up

REDC GHG Emissions Roll Up Report

Year: 2010

(all emissions in Column D, when summed will equal the total County or REDC protocol compliant GHG emissions estimate)

REDC / County Name: St Lawrence

Color Code

REQUIRED for the Roll Up Report, though some data may be zero, N/A, or considered to small to count
 Report NO Data in cell

| DRAFT Roll Up Report CGC. Emissions in MTCDE | | | | | | | |
|--|--|---------|---------|--------|-------|--------|-------|
| | | CO2e | CO2 | CH4 | N2O | PFC | SF6 |
| Built Environment | Residential Energy Consumption | | | | | | |
| | Electricity / Steam | 78,430 | 78,049 | 52 | 329 | | |
| | Natural Gas | 117,424 | 117,309 | 46 | 69 | | |
| | Propane / LPG | 24,171 | 24,076 | 24 | 71 | | |
| | Distillate Fuel Oil (#1, #2, Kerosene) | 99,390 | 99,057 | 84 | 249 | | |
| | Wood | 4,903 | - | 1,669 | 3,234 | | |
| | Commercial Energy Consumption | | | | | | |
| | Electricity / Steam | 25,968 | 25,842 | 17 | 109 | | |
| | Natural Gas | 76,042 | 75,968 | 30 | 44 | | |
| | Propane / LPG | 7,587 | 7,557 | 8 | 22 | | |
| | Distillate Fuel Oil (#1, #2, Kerosene) | 76,631 | 76,374 | 65 | 192 | | |
| | Residual Fuel Oil (#4 and #6) | - | | | | | |
| | Coal | 22 | 22 | 0 | 0 | | |
| | Wood | 1,337 | - | 455 | 882 | | |
| | Industrial Energy Consumption | | | | | | |
| | Electricity / Steam | 58,733 | 58,448 | 39 | 246 | | |
| | Natural Gas | 95,780 | 95,686 | 38 | 56 | | |
| | Propane / LPG | 75 | 75 | 0 | 0 | | |
| | Distillate Fuel Oil (#1, #2, Kerosene) | 19 | 19 | 0 | 0 | | |
| | Residual Fuel Oil (#4 and #6) | 26,164 | 26,077 | 22 | 65 | | |
| | Coal | - | | | | | |
| | Wood | - | | - | - | | |
| | Energy Generation and Supply | | | | | | |
| | Electricity T/D Losses | 9,494 | 9,448 | 6 | 40 | | |
| | Natural Gas T/D Losses | 41,154 | | 41,154 | | | |
| | Use of SF6 in the Utility Industry | 2,184 | | | | | 2,184 |
| | Industrial Processes | | | | | | |
| | Cement Production | - | | | | | |
| | Iron and Steel Production | - | | | | | |
| | Ferroalloy Production | - | | | | | |
| | Aluminum Production | 234,165 | 211,169 | - | - | 22,996 | |

REDC GHG Emissions Roll Up Report

Year: 2010

(all emissions in Column D, when summed will equal the total County or REDC protocol compliant GHG emissions estimate)

REDC / County Name **St Lawrence**

Color Code

REQUIRED for the Roll Up Report, though some data may be zero, N/A, or considered to small to count
 Report NO Data in cell

| DRAFT Roll Up Report CGC. Emissions in MTCDE | | CO2e | CO2 | CH4 | N2O | PFC | HFC | SF6 |
|--|--|------------------|------------------|----------------|---------------|---------------|---------------|--------------|
| Paper and Pulp | Paper and Pulp | - | | | | | | |
| | Limestone Use | - | | | | | | |
| | Soda Ash Use | - | | | | | | |
| | Semi-Conductor Manufacturing | - | | | | | | |
| | Chemical Manufacturing | - | | | | | | |
| | Product Use (ODS Substitutes) | - | | | | | | |
| | All Refrigerants- except utility SF6 | 25,630 | | | | | 25,630 | |
| Transportation Energy | On-road: ALL (Total not ethanol) | | | | | | | |
| | Motor Gasoline (E-10) | 309,498 | 308,405 | 817 | 277 | | | |
| | Diesel | 71,001 | 70,762 | 178 | 60 | | | |
| | Ethanol | - | | | | | | |
| | Biodiesel | - | | | | | | |
| | Rail | | | | | | | |
| | Diesel | 30,489 | 30,386 | 76 | 26 | | | |
| | Electricity Consumption | - | | | | | | |
| | Marine | | | | | | | |
| | Gasoline | - | | | | | | |
| | Distillate | 11,399 | 11,360 | 29 | 10 | | | |
| | Residual Fuel Oil | 11,398 | 11,360 | 28 | 10 | | | |
| | Off-road Mobile | | | | | | | |
| | All Fuels (Diesel and Gasoline) | 100,466 | 100,118 | 260 | 88 | | | |
| Waste Management | Solid Waste Management | | | | | | | |
| | Landfill Methane and Combustion | 21,225 | 29 | 21,195 | 0 | | | |
| | MSW incineration (non grid connected) | - | | | | | | |
| | Sewage Treatment | | | | | | | |
| | Central WWTPs and Septic Systems | 10,465 | | 7,849 | 2,616 | | | |
| Agriculture | Livestock | | | | | | | |
| | Enteric Fermentation | 139,790 | | 139,790 | | | | |
| | Manure management | 27,660 | | 22,914 | 4,746 | | | |
| | Crop Production and Soil Management | | | | | | | |
| | Use of Fertilizer | 9,006 | | | 9,006 | | | |
| | Crop Residue Incineration | - | | | | | | |
| Grand Totals | | 1,747,699 | 1,437,596 | 236,847 | 22,446 | 22,996 | 25,630 | 2,184 |

North Country
Electrical
Generation

| | Total Fuel Consumption | Units | MMBTU | MWh Generated | CO2e (Metric Tons) ¹ | | | | |
|-------------------------|------------------------|----------|-------------------|------------------|---------------------------------|----------|----------|--------------------|-----------------------------|
| | | | | | Non-biogenic CO2 | CH4 | N2O | Non biogenic Total | Biogenic Total ³ |
| Wind⁴ | 0 | 0 | 13,786,420 | 1,413,122 | 0 | 0 | 0 | 0 | 0 |
| Clinton | 0 | | 5,066,993 | 519,372 | 0 | 0 | 0 | 0 | 0 |
| Essex | | | | | | | | | |
| Franklin | 0 | | 1,875,406 | 192,231 | 0 | 0 | 0 | 0 | 0 |
| Hamilton | | | | | | | | | |
| Jefferson | | | | | | | | | |
| Lewis | 0 | | 6,844,021 | 701,519 | 0 | 0 | 0 | 0 | 0 |
| St. Lawrence | | | | | | | | | |

Notes

- CO2e calculated based on regional electricity generation data from 2010 EIA Form 923 reported energy use by facility, using fuel type emission factors from EPA's Mandatory Reporting Rule(MRR)*
*Federal Register / Vol. 74, No. 209 / Friday, October 30, 2009 / Rules and Regulations, Table C-1 and Table C-2, <http://epa.gov/climatechange/emissions/downloads09/GHG-MRR-FinalRule.pdf>
- New York State Totals from EIA New York <http://www.eia.gov/electricity/state/newyork/>
- CO2 from Wood products, landfill gas and 56%** of municipal waste generators are considered a source of biogenic emissions, not to be included in GHG emission totals
**Table B2, "Methodology for Allocating Municipal Solid Waste to Biogenic/Non-Biogenic Energy" http://www.eia.gov/cneaf/solar.renewables/page/mswaste/msw_report.html
- Renewable sources highlighted in green

GHG Emissions from Natural Gas Electricity Generation Transmission and Distribution Losses¹

| | % T&D Loss | Total Natural Gas (mcf) | CH4 Losses in mcf | CH4 Losses in kg | Non biogenic Total CO2e |
|----------------------|-------------|-------------------------|-------------------|------------------|-------------------------|
| North Country | 1.8% | 4,020,453 | 72,368 | 3,242,093 | 30,882 |
| Clinton | 1.8% | 3,818,200 | 68,728 | 3,078,996 | 29,329 |
| Essex | 1.8% | - | - | - | - |
| Franklin | 1.8% | - | - | - | - |
| Hamilton | 1.8% | - | - | - | - |
| Jefferson | 1.8% | 121,450 | 2,186 | 97,937 | 933 |
| Lewis | 1.8% | 24,798 | 446 | 19,997 | 190 |
| St. Lawrence | 1.8% | 56,005 | 1,008 | 45,162 | 430 |

Notes

- CO2e from T&D losses calculated based on ratio of estimated % fuel loss and total CO2e estimated from natural gas use for electricity generation within the region.

Supporting data and calculations are provided in the following E&E Excel Workbook:

File Name:

NC Elect Generation GHG Analysis1_21.xlsx

Date:

1/21/2013

North Country
Electrical
Consumption

Electricity Consumption GHG Emissions

| County | # Households ² | Population ² | MWh | MMBTU ³ | CO2e (Metric Tons) ¹ | | | |
|-----------------------------------|---------------------------|-------------------------|--------------------|--------------------|---------------------------------|------------|--------------|----------------|
| | | | | | CO2 | CH4 | N2O | Total |
| New York State⁴ | 7,317,755 | 19,378,102 | 144,624,000 | | | | | |
| North Country | 164,730 | 433,193 | 3,409,822 | 11,634,312 | 770,130 | 518 | 3,246 | 773,894 |
| Clinton | 31,582 | 82,128 | 1,088,539 | 3,714,096 | 245,854 | 165 | 1,036 | 247,055 |
| Essex | 16,262 | 39,370 | 321,816 | 1,098,037 | 72,684 | 49 | 306 | 73,039 |
| Franklin | 19,054 | 51,599 | 280,867 | 958,318 | 63,436 | 43 | 267 | 63,746 |
| Hamilton | 2,262 | 4,836 | 45,519 | 155,309 | 10,281 | 7 | 43 | 10,331 |
| Jefferson | 43,451 | 116,229 | 781,231 | 2,665,560 | 176,446 | 119 | 744 | 177,308 |
| Lewis | 10,514 | 27,087 | 173,082 | 590,557 | 39,092 | 26 | 165 | 39,283 |
| St. Lawrence | 41,605 | 111,944 | 718,767 | 2,452,435 | 162,338 | 109 | 684 | 163,132 |

| Sector | Population | MWh | MMBTU ³ | CO2e (Metric Tons) ¹ | | | |
|-------------------------------|----------------|------------------|--------------------|---------------------------------|------------|--------------|----------------|
| | | | | CO2 | CH4 | N2O | Total |
| North Country | 433,193 | 3,409,822 | 11,634,312 | 770,130 | 518 | 3,246 | 773,894 |
| Residential | | 1,435,160 | 4,896,765 | 324,140 | 218 | 1,366 | 325,724 |
| Clinton | | 443,353 | 1,512,719.34 | 100,134 | 67 | 422 | 100,623 |
| Essex | | 123,335 | 420,818.44 | 27,856 | 19 | 117 | 27,992 |
| Franklin | | 131,092 | 447,284.36 | 29,608 | 20 | 125 | 29,753 |
| Hamilton | | 28,225 | 96,304.45 | 6,375 | 4 | 27 | 6,406 |
| Jefferson | | 284,069 | 969,244.33 | 64,159 | 43 | 270 | 64,472 |
| Lewis | | 79,519 | 271,317.99 | 17,960 | 12 | 76 | 18,048 |
| St. Lawrence | | 345,568 | 1,179,076.44 | 78,049 | 52 | 329 | 78,430 |
| Commercial⁵ | | 788,526 | 2,690,450 | 178,094 | 120 | 751 | 178,964 |
| Clinton | | 345,549 | 1,179,013 | 78,044 | 52 | 329 | 78,426 |
| Essex | | 75,689 | 258,250 | 17,095 | 11 | 72 | 17,178 |
| Franklin | | 58,388 | 199,221 | 13,187 | 9 | 56 | 13,252 |
| Hamilton | | 14,806 | 50,516 | 3,344 | 2 | 14 | 3,360 |
| Jefferson | | 154,966 | 528,745 | 35,000 | 24 | 148 | 35,171 |
| Lewis | | 24,710 | 84,312 | 5,581 | 4 | 24 | 5,608 |
| St. Lawrence | | 114,418 | 390,393 | 25,842 | 17 | 109 | 25,968 |
| Industrial | | 1,186,136 | 4,047,096 | 267,897 | 180 | 1,129 | 269,206 |
| Clinton | | 299,638 | 1,022,364 | 67,675 | 45 | 285 | 68,006 |
| Essex | | 122,793 | 418,968 | 27,734 | 19 | 117 | 27,869 |
| Franklin | | 91,387 | 311,813 | 20,640 | 14 | 87 | 20,741 |
| Hamilton | | 2,488 | 8,488 | 562 | 0 | 2 | 565 |
| Jefferson | | 342,195 | 1,167,571 | 77,287 | 52 | 326 | 77,665 |
| Lewis | | 68,853 | 234,927 | 15,551 | 10 | 66 | 15,627 |
| St. Lawrence | | 258,782 | 882,965 | 58,448 | 39 | 246 | 58,733 |

Notes

1. CO2e calculated based on regional electricity consumption provided by NYSEG, National Grid, and municipal electricity providers and eGRID 2012 NYUP emission factors.
2. 2010 US Census
3. 1 MWh = 3.412 MMBtu
4. New York State Totals from EIA New York <http://www.eia.gov/electricity/state/newyork/>
5. Commercial totals include commercial and government sectors

Grid Losses from Electricity Consumption GHG Emissions

| County | MWh | MMBTU ³ | CO2e (Metric Tons) | | | |
|----------------------|----------------|--------------------|--------------------|-----------|------------|---------------|
| | | | CO2 | CH4 | N2O | Total |
| North Country | 198,452 | 677,117 | 44,822 | 30 | 189 | 45,041 |
| Clinton | 63,353 | 216,160 | 14,309 | 10 | 60 | 14,379 |
| Essex | 18,730 | 63,906 | 4,230 | 3 | 18 | 4,251 |
| Franklin | 16,346 | 55,774 | 3,692 | 2 | 16 | 3,710 |
| Hamilton | 2,649 | 9,039 | 598 | 0 | 3 | 601 |
| Jefferson | 45,468 | 155,136 | 10,269 | 7 | 43 | 10,319 |
| Lewis | 10,073 | 34,370 | 2,275 | 2 | 10 | 2,286 |
| St. Lawrence | 41,832 | 142,732 | 9,448 | 6 | 40 | 9,494 |
| Total | 198,452 | 677,117 | 44,822 | 30 | 189 | 45,041 |

0.058080963

1. CO2e calculated based on regional electricity consumption emissions and eGRID 2012 reported Eastern Grid loss rate of 5.82%

Electrical Transmission and Distribution--SF6 Emissions

| County | MWh ² | CO2e (Metric Tons) ¹ |
|------------------------------------|----------------------|---------------------------------|
| | | SF6 ³ |
| United States^{1,2} | 3,884,000,000 | 11,800,000 |
| North Country | 3,409,822 | 10,359 |
| Clinton | 1,088,539 | 3,307 |
| Essex | 321,816 | 978 |
| Franklin | 280,867 | 853 |
| Hamilton | 45,519 | 138 |
| Jefferson | 781,231 | 2,373 |
| Lewis | 173,082 | 526 |
| St. Lawrence | 718,767 | 2,184 |

1. CO2e calculated based on ratio of regional and national electricity consumption and reported national SF6 emissions.

2. U.S. Electricity end use consumption from EIA Annual Review, 2010 <http://www.eia.gov/totalenergy/data/annual/showtext.cfm?t=ptb0801>

3. U.S. SF6 emissions from U.S. Greenhouse Gas Inventory Report for 2010: <http://www.epa.gov/climatechange/ghgemissions/usinventoryreport.html>

Supporting data and calculations are provided in the following E&E Excel Workbook:

File Name:

NC Electricity Consumption Emissions1_23.xlsx

Date:

1/23/2013

North Country
Residential Energy
Emissions

Residential Building Emissions from Stationary Combustion

| | CO ₂ e (Metric Tons) ¹ | | | | | | |
|--------------------------|--|--------------------|-------------------|-----------------|------------------|-------------------|-----------------------------|
| | # Households ² | mmBTU ² | CO ₂ | CH ₄ | N ₂ O | Total | Biogenic Total ³ |
| New York State | 7,317,755 | 595,650,000 | 31,788,580 | 50,832 | 103,983 | 31,943,395 | 4,633,720 |
| Natural Gas | 3,972,785 | 399,700,000 | 21,192,094 | 8,394 | 12,391 | 21,212,878 | |
| Bottled, Tank, or LP gas | 225,680 | 22,200,000 | 1,398,156 | 1,399 | 4,129 | 1,403,684 | |
| Fuel Oil, Kerosene, etc. | 2,207,233 | 124,300,000 | 9,193,228 | 7,831 | 23,120 | 9,224,179 | |
| Wood | 138,599 | 49,400,000 | - | 33,197 | 64,319 | 97,516 | 4,633,720 |
| Coal | 19,542 | 50,000 | 5,102 | 12 | 25 | 5,138 | |
| North Country | 164,730 | 21,074,411 | 824,013 | 6,194 | 12,426 | 842,634 | 323,887 |
| Natural Gas | 38,179 | 5,471,996 | 290,125 | 115 | 170 | 290,410 | |
| Bottled, Tank, or LP gas | 13,405 | 1,428,293 | 102,880 | 103 | 304 | 103,286 | |
| Fuel Oil, Kerosene, etc. | 64,432 | 5,825,306 | 430,840 | 367 | 1,084 | 432,290 | |
| Wood | 20,531 | 8,347,161 | - | 5,609 | 10,868 | 16,477 | 323,887 |
| Coal | 556 | 1,654 | 169 | 0 | 1 | 170 | |
| Clinton | 31,582 | 2,815,653 | 119,297 | 808 | 1,645 | 121,750 | 99,826 |
| Natural Gas | 3,137 | 426,109 | 22,592 | 9 | 13 | 22,614 | |
| Bottled, Tank, or LP gas | 1,083 | 120,481 | 7,588 | 8 | 22 | 7,618 | |
| Fuel Oil, Kerosene, etc. | 14,956 | 1,204,518 | 89,086 | 76 | 224 | 89,386 | |
| Wood | 2,995 | 1,064,247 | - | 715 | 1,386 | 2,101 | 99,826 |
| Coal | 109 | 298 | 30 | 0 | 0 | 31 | |
| Essex | 16,262 | 2,012,211 | 84,337 | 737 | 1,493 | 86,567 | 93,180 |
| Natural Gas | 1,101 | 182,028 | 9,651 | 4 | 6 | 9,661 | |
| Bottled, Tank, or LP gas | 1,605 | 12,040 | 13,684 | 14 | 40 | 13,738 | |
| Fuel Oil, Kerosene, etc. | 8,416 | 824,645 | 60,991 | 52 | 153 | 61,196 | |
| Wood | 2,298 | 993,385 | - | 668 | 1,293 | 1,961 | 93,180 |
| Coal | 34 | 114 | 12 | 0 | 0 | 12 | |
| Franklin | 19,054 | 2,555,611 | 104,065 | 805 | 1,641 | 106,510 | 100,435 |
| Natural Gas | 1,173 | 191,958 | 10,178 | 4 | 6 | 10,188 | |
| Bottled, Tank, or LP gas | 1,193 | 159,856 | 10,068 | 10 | 30 | 10,108 | |
| Fuel Oil, Kerosene, etc. | 11,673 | 1,132,428 | 83,754 | 71 | 211 | 84,036 | |
| Wood | 2,502 | 1,070,733 | - | 720 | 1,394 | 2,114 | 100,435 |
| Coal | 193 | 635 | 65 | 0 | 0 | 65 | |
| Hamilton | 2,262 | 417,569 | 13,617 | 159 | 320 | 14,096 | 20,577 |
| Natural Gas | 95 | 17,434 | 924 | 0 | 1 | 925 | |
| Bottled, Tank, or LP gas | 409 | 61,564 | 3,877 | 4 | 11 | 3,893 | |
| Fuel Oil, Kerosene, etc. | 1,095 | 119,195 | 8,816 | 8 | 22 | 8,845 | |
| Wood | 457 | 219,375 | - | 147 | 286 | 433 | 20,577 |
| Coal | - | - | - | - | - | - | |
| Jefferson | 43,451 | 4,608,622 | 207,332 | 854 | 1,713 | 209,899 | 2,137 |
| Natural Gas | 17,892 | 2,275,993 | 120,673 | 48 | 71 | 120,792 | |
| Bottled, Tank, or LP gas | 5,073 | 528,711 | 33,298 | 33 | 98 | 33,430 | |
| Fuel Oil, Kerosene, etc. | 9,557 | 720,878 | 53,316 | 45 | 134 | 53,496 | |

Residential Building Emissions from Stationary Combustion

| | CO ₂ e (Metric Tons) ¹ | | | | | | Biogenic Total ³ |
|--------------------------|--|--------------------|-----------------|-----------------|------------------|----------------|-----------------------------|
| | # Households ² | mmBTU ² | CO ₂ | CH ₄ | N ₂ O | Total | |
| Wood | 3,253 | 1,082,607 | - | 728 | 1,410 | 2,137 | 2,137 |
| Coal | 169 | 433 | 44 | 0 | 0 | 44 | |
| Lewis | 10,514 | 2,246,743 | 54,913 | 1,007 | 1,991 | 57,912 | 2,829 |
| Natural Gas | 934 | 165,927 | 8,797 | 3 | 5 | 8,806 | |
| Bottled, Tank, or LP gas | 1,123 | 163,366 | 10,289 | 10 | 30 | 10,329 | |
| Fuel Oil, Kerosene, etc. | 4,599 | 484,316 | 35,820 | 31 | 90 | 35,941 | |
| Wood | 3,084 | 1,433,067 | - | 963 | 1,866 | 2,829 | 2,829 |
| Coal | 19 | 67 | 7 | 0 | 0 | 7 | |
| St. Lawrence | 41,605 | 6,418,002 | 240,452 | 1,824 | 3,623 | 245,899 | 4,903 |
| Natural Gas | 13,847 | 2,212,546 | 117,309 | 46 | 69 | 117,424 | |
| Bottled, Tank, or LP gas | 2,920 | 382,275 | 24,076 | 24 | 71 | 24,171 | |
| Fuel Oil, Kerosene, etc. | 14,136 | 1,339,327 | 99,057 | 84 | 249 | 99,390 | |
| Wood | 5,942 | 2,483,746 | - | 1,669 | 3,234 | 4,903 | 4,903 |
| Coal | 33 | 107 | 11 | 0 | 0 | 11 | |

Notes:

1. CO₂e calculated based on allocation of EIA 2010 Residential Energy use in New York*, using fuel type emission factors from EPA's Mandatory Reporting Rule(MRR)**
 *http://www.eia.gov/state/seds/sep_sum/html/pdf/sum_btu_com.pdf

**Federal Register / Vol. 74, No. 209 / Friday, October 30, 2009 / Rules and Regulations, Table C-1 and Table C-2, <http://epa.gov/climatechange/emissions/downloads09/GHG-MRR-FinalRule.pdf>

2. New York State, regional and county residential energy totals allocated based on 2007 - 2010 ACS data for type of residence and heating fuel type, 2010 US Census data used for total occupied units, and HDD determined based on NOAA New York State climate divisions. fuel use by structure size determined though EPA study provided to GHG Inventory Protocol group.

3. CO₂ from Wood products are considered a source of biogenic emissions, not to be included in GHG emission totals

4. Renewable sources highlighted in green

GHG Emissions from Residential Natural Gas Use Transmission and Distribution Losses¹

| | GHG Emissions from Residential Natural Gas Use Transmission and Distribution Losses ¹ | | | | |
|----------------------|--|-------------------------|-------------------------------|-------------------------------|-------------------------|
| | % T&D Loss | Total Natural Gas (mcf) | CH ₄ Losses in mcf | CH ₄ Losses in lbs | Total CO ₂ e |
| North Country | 1.8% | 5,322,954 | 95,813 | 4,292,429.83 | 40,887 |
| Clinton | 1.8% | 414,503 | 7,461 | 334,255.12 | 3,184 |
| Essex | 1.8% | 177,070 | 3,187 | 142,789.10 | 1,360 |
| Franklin | 1.8% | 186,730 | 3,361 | 150,578.87 | 1,434 |
| Hamilton | 1.8% | 16,959 | 305 | 13,676.08 | 130 |
| Jefferson | 1.8% | 2,214,001 | 39,852 | 1,785,370.63 | 17,006 |
| Lewis | 1.8% | 161,408 | 2,905 | 130,159.36 | 1,240 |
| St. Lawrence | 1.8% | 2,152,283 | 38,741 | 1,735,600.68 | 16,532 |

Notes

1. CO₂e from T&D losses calculated based on ratio of estimated % fuel loss and total residential natural gas use within the region.

Supporting data and calculations are provided in the following E&E Excel Workbook:

File Name:

NC Residential Direct Energy Sources 1_21_13.xlsx

Date:

1/21/2013

North Country
Commercial
Energy Emissions

Commercial Energy Use Emissions

| | | | | CO ₂ e (Metric Tons) ¹ | | | | Biogenic Total ³ |
|--------------------------|----------------------|-------------------------|--------------------|--|-----------------|------------------|----------------|-----------------------------|
| | Workers ² | Sq Footage ² | mmBTU ¹ | CO ₂ | CH ₄ | N ₂ O | Total | |
| Jefferson | | | | 133,914 | 284 | 583 | 134,780 | 28,573 |
| Natural Gas | 15,343 | 15,490,389 | 1,520,698 | 80,627 | 32 | 47 | 80,706 | |
| Bottled, Tank, or LP gas | 4,350 | 4,391,995 | 171,221 | 10,783 | 11 | 32 | 10,826 | |
| Fuel Oil, Kerosene, etc. | 8,195 | 8,274,249 | 573,451 | 42,412 | 36 | 107 | 42,555 | |
| Wood | 2,790 | 11,036,031 | 304,611 | - | 205 | 397 | 601 | 28,573 |
| Coal | 145 | 146,120 | 885 | 90 | 0 | 0 | 91 | |
| Lewis | 4,454 | 29,254,356 | 3,474,750 | 137,613 | 1,098 | 2,226 | 140,937 | 137,991 |
| Natural Gas | 426 | 3,342,746 | 404,479 | 21,446 | 8 | 13 | 21,467 | |
| Bottled, Tank, or LP gas | 512 | 4,016,973 | 193,022 | 12,157 | 12 | 36 | 12,205 | |
| Fuel Oil, Kerosene, etc. | 2,099 | 16,454,687 | 1,405,626 | 103,960 | 89 | 261 | 104,310 | |
| Wood | 1,408 | 5,372,527 | 1,471,120 | - | 989 | 1,915 | 2,904 | 137,991 |
| Coal | 9 | 67,423 | 503 | 51 | 0 | 0 | 52 | |
| St. Lawrence | 26,929 | 30,788,092 | 3,262,994 | 159,920 | 558 | 1,141 | 161,619 | 63,535 |
| Natural Gas | 10,111 | 12,519,954 | 1,432,815 | 75,968 | 30 | 44 | 76,042 | |
| Bottled, Tank, or LP gas | 2,132 | 2,640,208 | 119,988 | 7,557 | 8 | 22 | 7,587 | |
| Fuel Oil, Kerosene, etc. | 10,322 | 12,781,229 | 1,032,636 | 76,374 | 65 | 192 | 76,631 | |
| Wood | 4,339 | 2,816,587 | 677,342 | - | 455 | 882 | 1,337 | 63,535 |
| Coal | 24 | 30,113 | 213 | 22 | 0 | 0 | 22 | |

Notes:

1. CO₂e calculated based on allocation of EIA 2010 Commercial Energy use in New York*, using fuel type emission factors from EPA's Mandatory Reporting Rule(MRR)**

*http://www.eia.gov/state/seds/sep_sum/html/pdf/sum_btu_com.pdf

**Federal Register / Vol. 74, No. 209 / Friday, October 30, 2009 / Rules and Regulations, Table C-1 and Table C-2,

<http://epa.gov/climatechange/emissions/downloads09/GHG-MRR-FinalRule.pdf>

2. New York State, regional and county commercial energy totals allocated based on NYS 2010 Department of Labor statistics for each county, the CBECs average floor space per worker, and 2010 HDD based on NOAA climate divisions consumption and generation

3. CO₂ from Wood products are considered a source of biogenic emissions, not to be included in GHG emission totals

Commercial Energy Use Emissions

| | Workers ² | Sq Footage ² | mmBTU ¹ | CO ₂ e (Metric Tons) ¹ | | | | |
|--|----------------------|-------------------------|--------------------|--|-----------------|------------------|-------|-----------------------------|
| | | | | CO ₂ | CH ₄ | N ₂ O | Total | Biogenic Total ³ |

GHG Emissions from Natural Gas Use Transmission and Distribution Losses¹

| | % T&D Loss | Total Natural Gas (mcf) | CH ₄ Losses in mcf | CH ₄ Losses in lbs | Total CO ₂ e |
|-----------------------------------|-------------|-------------------------|-------------------------------|-------------------------------|-------------------------|
| Natural Gas T&D Losses | 1.8% | 3,755,867.97 | 67,606 | 3,028,731.93 | 28,850 |
| Clinton | 1.8% | 281,237.82 | 5,062 | 226,790.17 | 2,160 |
| Essex | 1.8% | 97,456.83 | 1,754 | 78,589.19 | 749 |
| Franklin | 1.8% | 102,363.16 | 1,843 | 82,545.65 | 786 |
| Hamilton | 1.8% | 8,280.82 | 149 | 6,677.65 | 64 |
| Jefferson | 1.8% | 1,479,278.14 | 26,627 | 1,192,889.89 | 11,363 |
| Lewis | 1.8% | 393,462.50 | 7,082 | 317,288.16 | 3,022 |
| St. Lawrence | 1.8% | 1,393,788.72 | 25,088 | 1,123,951.22 | 10,706 |

Notes

1. CO₂e from T&D losses calculated based on ratio of estimated % fuel loss and total residential natural gas use within the region.

Supporting data and calculations are provided in the following E&E Excel Workbook:

File Name:

NC Commercial Energy Emissions 1-21-2013

Date:

1/21/2013

North Country
Industrial Energy
Emissions

Industrial Energy Use Emissions

| | CO2e (Metric Tons) ¹ | | | | | |
|--|---------------------------------|------------------|-----------------|------------------|------------------|-----------------------------|
| | mmBTU ² | CO ₂ | CH ₄ | N ₂ O | Total | Biogenic Total ³ |
| New York State | 142,674,216 | 8,707,842 | 14,208 | 28,311 | 8,750,361 | 219,731 |
| Natural Gas | 100,184,192 | 5,311,766 | 2,104 | 3,106 | 5,316,975 | |
| LPG | 381,677 | 24,038 | 24 | 71 | 24,133 | |
| Distillate Fuel Oil (#1, #2, Kerosene) | 2,866,662 | 211,235 | 181 | 533 | 211,949 | |
| <i>Heating Oil #1</i> | <i>1,103,236</i> | <i>80,812</i> | <i>70</i> | <i>205</i> | <i>81,087</i> | |
| <i>Heating Oil #2</i> | <i>1,763,426</i> | <i>130,423</i> | <i>111</i> | <i>328</i> | <i>130,862</i> | |
| Residual Fuel Oil (#4 and #6) | 14,565,792 | 1,093,813 | 918 | 2,709 | 1,097,440 | |
| <i>Heating Oil #4</i> | <i>1,300,971</i> | <i>97,625</i> | <i>82</i> | <i>242</i> | <i>97,949</i> | |
| <i>Heating Oil #6</i> | <i>13,264,821</i> | <i>996,188</i> | <i>836</i> | <i>2,467</i> | <i>999,491</i> | |
| Coal | 12,699,950 | 1,193,241 | 2,934 | 6,299 | 1,202,474 | |
| <i>Bituminous Coal</i> | <i>11,911,597</i> | <i>1,112,543</i> | <i>2,752</i> | <i>5,908</i> | <i>1,121,203</i> | |
| <i>Anthracite Coal</i> | <i>169,701</i> | <i>17,571</i> | <i>39</i> | <i>84</i> | <i>17,694</i> | |
| <i>Coke</i> | <i>618,652</i> | <i>63,127</i> | <i>143</i> | <i>307</i> | <i>63,577</i> | |
| Wood ⁴ | 2,342,544 | - | 1,574 | 3,050 | 4,624 | 219,731 |
| MSW ⁵ | 9,633,400 | 873,749 | 6,474 | 12,543 | 892,766 | |
| Solid Other | | | | | | |
| Liquid Other | | | | | | |
| North Country | 8,020,260 | 450,931 | 952 | 2,036 | 453,920 | 91,613 |
| Natural Gas | 3,518,810 | 186,567 | 74 | 109 | 186,750 | |
| LPG | 26,909 | 1,695 | 2 | 5 | 1,701 | |
| Distillate Fuel Oil (#1, #2, Kerosene) | 17,318 | 1,281 | 1 | 3 | 1,285 | |
| <i>Heating Oil #1</i> | <i>493</i> | <i>36</i> | <i>0</i> | <i>0</i> | <i>36</i> | |
| <i>Heating Oil #2</i> | <i>16,826</i> | <i>1,244</i> | <i>1</i> | <i>3</i> | <i>1,249</i> | |
| Residual Fuel Oil (#4 and #6) | 3,480,538 | 261,388 | 219 | 647 | 262,255 | |
| <i>Heating Oil #4</i> | <i>-</i> | <i>-</i> | <i>-</i> | <i>-</i> | <i>-</i> | |
| <i>Heating Oil #6</i> | <i>3,480,538</i> | <i>261,388</i> | <i>219</i> | <i>647</i> | <i>262,255</i> | |
| Coal | - | - | - | - | - | |
| <i>Bituminous Coal</i> | <i>-</i> | <i>-</i> | <i>-</i> | <i>-</i> | <i>-</i> | |
| <i>Anthracite Coal</i> | <i>-</i> | <i>-</i> | <i>-</i> | <i>-</i> | <i>-</i> | |
| <i>Coke</i> | <i>-</i> | <i>-</i> | <i>-</i> | <i>-</i> | <i>-</i> | |
| Wood | 976,685 | - | 656 | 1,272 | 1,928 | 91,613 |
| MSW | - | - | - | - | - | |
| Solid Other | | | | | | |
| Liquid Other | | | | | | |

Industrial Energy Use Emissions

| | CO ₂ e (Metric Tons) ¹ | | | | | Biogenic Total ³ |
|--|--|-----------------|-----------------|------------------|----------------|-----------------------------|
| | mmBTU ² | CO ₂ | CH ₄ | N ₂ O | Total | |
| Clinton | 637,537 | 33,974 | 14 | 21 | 34,009 | 0 |
| Natural Gas | 629,340 | 33,368 | 13 | 20 | 33,400 | |
| LPG | - | - | - | - | - | |
| Distillate Fuel Oil (#1, #2, Kerosene) | 8,197 | 606 | 1 | 2 | 608 | |
| <i>Heating Oil #1</i> | - | - | - | - | - | |
| <i>Heating Oil #2</i> | 8,197 | 606 | 1 | 2 | 608 | |
| Residual Fuel Oil (#4 and #6) | - | - | - | - | - | |
| <i>Heating Oil #4</i> | - | - | - | - | - | |
| <i>Heating Oil #6</i> | - | - | - | - | - | |
| Coal | - | - | - | - | - | |
| <i>Bituminous Coal</i> | - | - | - | - | - | |
| <i>Anthracite Coal</i> | - | - | - | - | - | |
| <i>Coke</i> | - | - | - | - | - | |
| Wood | - | - | - | - | - | - |
| MSW | - | - | - | - | - | |
| Solid Other | - | - | - | - | - | |
| Liquid Other | - | - | - | - | - | |
| Essex | 4,119,819 | 235,999 | 854 | 1,856 | 238,710 | 91,613 |
| Natural Gas | - | - | - | - | - | |
| LPG | 3,492 | 220 | 0 | 1 | 221 | |
| Distillate Fuel Oil (#1, #2, Kerosene) | 6,538 | 483 | 0 | 1 | 485 | |
| <i>Heating Oil #1</i> | 322 | 24 | 0 | 0 | 24 | |
| <i>Heating Oil #2</i> | 6,216 | 460 | 0 | 1 | 461 | |
| Residual Fuel Oil (#4 and #6) | 3,133,104 | 235,296 | 197 | 583 | 236,076 | |
| <i>Heating Oil #4</i> | - | - | - | - | - | |
| <i>Heating Oil #6</i> | 3,133,104 | 235,296 | 197 | 583 | 236,076 | |
| Coal | - | - | - | - | - | |
| <i>Bituminous Coal</i> | - | - | - | - | - | |
| <i>Anthracite Coal</i> | - | - | - | - | - | |
| <i>Coke</i> | - | - | - | - | - | |
| Wood | 976,685 | - | 656 | 1,272 | 1,928 | 91,613 |
| MSW | - | - | - | - | - | |
| Solid Other | - | - | - | - | - | |
| Liquid Other | - | - | - | - | - | |

Industrial Energy Use Emissions

| | CO2e (Metric Tons) ¹ | | | | | |
|--|---------------------------------|-----------------|-----------------|------------------|-------|-----------------------------|
| | mmBTU ² | CO ₂ | CH ₄ | N ₂ O | Total | Biogenic Total ³ |
| Franklin | - | - | - | - | - | - |
| Natural Gas | - | - | - | - | - | - |
| LPG | - | - | - | - | - | - |
| Distillate Fuel Oil (#1, #2, Kerosene) | - | - | - | - | - | - |
| <i>Heating Oil #1</i> | - | - | - | - | - | - |
| <i>Heating Oil #2</i> | - | - | - | - | - | - |
| Residual Fuel Oil (#4 and #6) | - | - | - | - | - | - |
| <i>Heating Oil #4</i> | - | - | - | - | - | - |
| <i>Heating Oil #6</i> | - | - | - | - | - | - |
| Coal | - | - | - | - | - | - |
| <i>Bituminous Coal</i> | - | - | - | - | - | - |
| <i>Anthracite Coal</i> | - | - | - | - | - | - |
| <i>Coke</i> | - | - | - | - | - | - |
| Wood | - | - | - | - | - | - |
| MSW | - | - | - | - | - | - |
| Solid Other | - | - | - | - | - | - |
| Liquid Other | - | - | - | - | - | - |
| Hamilton | - | - | - | - | - | - |
| Natural Gas | - | - | - | - | - | - |
| LPG | - | - | - | - | - | - |
| Distillate Fuel Oil (#1, #2, Kerosene) | - | - | - | - | - | - |
| <i>Heating Oil #1</i> | - | - | - | - | - | - |
| <i>Heating Oil #2</i> | - | - | - | - | - | - |
| Residual Fuel Oil (#4 and #6) | - | - | - | - | - | - |
| <i>Heating Oil #4</i> | - | - | - | - | - | - |
| <i>Heating Oil #6</i> | - | - | - | - | - | - |
| Coal | - | - | - | - | - | - |
| <i>Bituminous Coal</i> | - | - | - | - | - | - |
| <i>Anthracite Coal</i> | - | - | - | - | - | - |
| <i>Coke</i> | - | - | - | - | - | - |
| Wood | - | - | - | - | - | - |
| MSW | - | - | - | - | - | - |
| Solid Other | - | - | - | - | - | - |
| Liquid Other | - | - | - | - | - | - |

Industrial Energy Use Emissions

| | CO ₂ e (Metric Tons) ¹ | | | | | |
|--|--|-----------------|-----------------|------------------|---------------|-----------------------------|
| | mmBTU ² | CO ₂ | CH ₄ | N ₂ O | Total | Biogenic Total ³ |
| Jefferson | 188,700 | 10,005 | 4 | 6 | 10,015 | - |
| Natural Gas | 188,700 | 10,005 | 4 | 6 | 10,015 | - |
| LPG | - | - | - | - | - | - |
| Distillate Fuel Oil (#1, #2, Kerosene) | - | - | - | - | - | - |
| <i>Heating Oil #1</i> | - | - | - | - | - | - |
| <i>Heating Oil #2</i> | - | - | - | - | - | - |
| Residual Fuel Oil (#4 and #6) | - | - | - | - | - | - |
| <i>Heating Oil #4</i> | - | - | - | - | - | - |
| <i>Heating Oil #6</i> | - | - | - | - | - | - |
| Coal | - | - | - | - | - | - |
| <i>Bituminous Coal</i> | - | - | - | - | - | - |
| <i>Anthracite Coal</i> | - | - | - | - | - | - |
| <i>Coke</i> | - | - | - | - | - | - |
| Wood | - | - | - | - | - | - |
| MSW | - | - | - | - | - | - |
| Solid Other | - | - | - | - | - | - |
| Liquid Other | - | - | - | - | - | - |
| Lewis | 920,809 | 49,096 | 20 | 32 | 49,148 | - |
| Natural Gas | 896,059 | 47,509 | 19 | 28 | 47,556 | - |
| LPG | 22,224 | 1,400 | 1 | 4 | 1,405 | - |
| Distillate Fuel Oil (#1, #2, Kerosene) | 2,327 | 172 | 0 | 0 | 173 | - |
| <i>Heating Oil #1</i> | 171 | 12 | 0 | 0 | 13 | - |
| <i>Heating Oil #2</i> | 2,156 | 159 | 0 | 0 | 160 | - |
| Residual Fuel Oil (#4 and #6) | 200 | 15 | 0 | 0 | 15 | - |
| <i>Heating Oil #4</i> | - | - | - | - | - | - |
| <i>Heating Oil #6</i> | 200 | 15 | 0 | 0 | 15 | - |
| Coal | - | - | - | - | - | - |
| <i>Bituminous Coal</i> | - | - | - | - | - | - |
| <i>Anthracite Coal</i> | - | - | - | - | - | - |
| <i>Coke</i> | - | - | - | - | - | - |
| Wood | - | - | - | - | - | - |
| MSW | - | - | - | - | - | - |
| Solid Other | - | - | - | - | - | - |
| Liquid Other | - | - | - | - | - | - |

Industrial Energy Use Emissions

| | CO2e (Metric Tons) ¹ | | | | | |
|--|---------------------------------|-----------------|-----------------|------------------|----------------|-----------------------------|
| | mmBTU ² | CO ₂ | CH ₄ | N ₂ O | Total | Biogenic Total ³ |
| St. Lawrence | 2,153,396 | 121,857 | 60 | 121 | 122,038 | - |
| Natural Gas | 1,804,711 | 95,686 | 38 | 56 | 95,780 | |
| LPG | 1,193 | 75 | 0 | 0 | 75 | |
| Distillate Fuel Oil (#1, #2, Kerosene) | 257 | 19 | 0 | 0 | 19 | |
| <i>Heating Oil #1</i> | - | - | - | - | - | |
| <i>Heating Oil #2</i> | 257 | 19 | 0 | 0 | 19 | |
| Residual Fuel Oil (#4 and #6) | 347,235 | 26,077 | 22 | 65 | 26,164 | |
| <i>Heating Oil #4</i> | - | - | - | - | - | |
| <i>Heating Oil #6</i> | 347,235 | 26,077 | 22 | 65 | 26,164 | |
| Coal | - | - | - | - | - | |
| <i>Bituminous Coal</i> | - | - | - | - | - | |
| <i>Anthracite Coal</i> | - | - | - | - | - | |
| <i>Coke</i> | - | - | - | - | - | |
| Wood | - | - | - | - | - | - |
| MSW | - | - | - | - | - | |
| Solid Other | | | | | | |
| Liquid Other | | | | | | |

Notes

1. CO2e calculated based on regional Title V Air Quality Permitting energy data provided to the CGC GHG Protocol Working Group from the NYSDEC (August 2012), using fuel type emission factors from EPA's Mandatory Reporting Rule(MRR)*
 *Federal Register / Vol. 74, No. 209 / Friday, October 30, 2009 / Rules and Regulations, Table C-1 and Table C-2,
<http://epa.gov/climatechange/emissions/downloads09/GHG-MRR-FinalRule.pdf>
2. New York State, regional and county actual energy totals reported for all Title V sources within the area. Electricity generation and landfill emissions were excluded as they are calculated and counted separately in waste and electric consumption and generation
3. CO2 from Wood products are considered a source of biogenic emissions, not to be included in GHG emission totals
4. Renewable sources highlighted in green
5. MSW(Municipal Solid Waste) emissions are included in waste calculations

Industrial Energy Use Emissions

| | CO ₂ e (Metric Tons) ¹ | | | | | Biogenic Total ³ |
|--|--|-----------------|-----------------|------------------|-------|-----------------------------|
| | mmBTU ² | CO ₂ | CH ₄ | N ₂ O | Total | |

GHG Emissions from Natural Gas Use Transmission and Distribution Losses¹

| | % T&D Loss | Total Natural Gas (mcf) | CH ₄ Losses in mcf | CH ₄ Losses in lbs | Total CO ₂ e |
|----------------------|-------------|-------------------------|-------------------------------|-------------------------------|-------------------------|
| North Country | 1.8% | 3,422,966.93 | 61,613 | 2,760,281 | 26,293 |
| Clinton | 1.8% | 612,198.44 | 11,020 | 493,677 | 4,702 |
| Essex | 1.8% | - | - | - | - |
| Franklin | 1.8% | - | - | - | - |
| Hamilton | 1.8% | - | - | - | - |
| Jefferson | 1.8% | 183,560.31 | 3,304 | 148,023 | 1,410 |
| Lewis | 1.8% | 871,652.72 | 15,690 | 702,901 | 6,695 |
| St. Lawrence | 1.8% | 1,755,555.45 | 31,600 | 1,415,680 | 13,485 |

Notes

1. CO₂e from T&D losses calculated based on ratio of estimated % fuel loss and total natural gas use within the region.

Supporting data and calculations are provided in the following E&E Excel Workbook:

File Name:

NC Industrial Energy Sources 1-21-13.xlsx

Date:

1/21/2013

North Country
Industrial Emission
Sources

Industrial GHG Emissions

2010 Emissions reported as part of EPA MRR Program

| Region | Source | Process | CO2e (Metric Tons) | | | | | | |
|-----------------------|---|------------------------------|--------------------------------|-----------------|------------------|-----------------|-------------------------------|------------------|----------------|
| | | | Emissions by Type ¹ | | | | | | Total CO2e |
| | | | CO2 | CH ₄ | N ₂ O | CF ₄ | C ₂ F ₆ | CHF ₃ | |
| New York State | | | | | | | | | |
| North Country | | | | | | | | | 267,370 |
| Clinton | None | | | | | | | | |
| Essex | Ticonderoga Mill | Pulp and Paper Manufacturing | X | X | X | | | | 33,205 |
| Franklin | None | | | | | | | | |
| Hamilton | None | | | | | | | | |
| Jefferson | None | | | | | | | | |
| Lewis | None | | | | | | | | |
| St. Lawrence | ALCOA INC MASSENA OPERATIONS NEWTON FALLS PAPER COMPANY, | Aluminum Production | 211,169 | | | 19,500 | 3,496 | | 234,165 |
| St. Lawrence | LLC | Pulp and Paper Manufacturing | | | | | | | 0 |

Notes:

1. Emissions from general combustion are not included in sources totals, and have been subtracted from reported totals where appropriate.

Ozone Depleting Substance Substitution Emissions

| Region | Population | HFC Emissions | |
|-----------------------|-------------------|--------------------------|--|
| | | Total CO2e (Metric Tons) | |
| New York State | 19,378,102 | 4,436,697 | |
| North Country | 433,193 | 99,181 | |
| Clinton | 82,128 | 18,804 | |
| Essex | 39,370 | 9,014 | |
| Franklin | 51,599 | 11,814 | |
| Hamilton | 4,836 | 1,107 | |
| Jefferson | 116,229 | 26,611 | |
| Lewis | 27,087 | 6,202 | |
| St. Lawrence | 111,944 | 25,630 | |

Notes:

1. Emissions from HFC use estimated based on 2010 population ratio and 2007 Reported Statewide HFC emissions (New York State Greenhouse Gas Emissions Inventory and Forecasts for the 2009 State Energy Plan, NYSERDA, August 6, 2009)

Supporting data and calculations are provided in the following E&E Excel Workbook:

File Name:

NC Industrial Sources_9_28_12.xlsx

Date:

9/28/2012

North Country
Transportation
Emissions,
On-Road

Table 1
Greenhouse Gas Emission Inventory Summary
Transportation: On-Road Vehicles
North Country New York Region

| County | Annual Vehicle Miles Travelled ¹ (VMT) | Annual GHG Emissions ² (metric tons CO ₂ e/yr) | | | |
|-------------------------------|---|--|------------------|-----------------|------------------|
| | | CO ₂ | N ₂ O | CH ₄ | Total |
| Clinton | 865,169,884 | 433,423 | 1,086 | 372 | 434,881 |
| Essex | 566,995,335 | 279,083 | 699 | 239 | 280,021 |
| Franklin | 447,518,335 | 211,421 | 530 | 181 | 212,132 |
| Hamilton | 97,234,344 | 45,861 | 111 | 39 | 46,011 |
| Jefferson | 1,146,056,382 | 576,745 | 1,445 | 495 | 578,685 |
| Lewis | 260,474,281 | 123,648 | 310 | 106 | 124,064 |
| St. Lawrence | 851,219,149 | 401,611 | 1,006 | 345 | 402,962 |
| North Country NY Total | 4,234,667,708 | 2,071,792 | 5,187 | 1,777 | 2,078,756 |

Notes:

1. VMT data for each county provided by NYSDOT.
2. NYSDOT regional-specific data on fleet profile and national fleet fuel economy data to estimate county-level GHG emissions.

| Emission Type | Fuel Type | North Country NY Annual GHG Emissions (metric tons CO ₂ e/yr) |
|---------------|-----------------------|--|
| Non-Biogenic | Gasoline ¹ | 1,545,164 |
| | Diesel | 421,448 |
| | Total | 1,966,612 |
| Biogenic | Ethanol ¹ | 112,144 |
| TOTAL | | 2,078,756 |

Notes:

1. Portion of Gasoline E-10.
2. NYSDOT regional-specific data on fleet profile and national fleet fuel economy data to estimate GHG emissions. The distribution of GHG emissions for the components of gasoline E-10 (i.e., gasoline and ethanol) is based on a fraction of 90% gasoline and 10% ethanol.

| County | Annual Fuel Consumption (MMBtu/yr) | | |
|----------------------|------------------------------------|------------------|-------------------|
| | Gasoline (E-10) | Diesel | Total |
| Clinton | 4,816,540 | 1,295,316 | 6,111,856 |
| Essex | 3,177,685 | 761,748 | 3,939,432 |
| Franklin | 2,482,864 | 505,430 | 2,988,294 |
| Hamilton | 538,259 | 109,932 | 648,191 |
| Jefferson | 6,381,302 | 1,750,127 | 8,131,429 |
| Lewis | 1,447,513 | 299,927 | 1,747,440 |
| St. Lawrence | 4,719,912 | 956,767 | 5,676,679 |
| North Country | 23,564,075 | 5,679,245 | 29,243,320 |

Notes:

1. Annual energy consumption is based on projected fuel consumption calculated from NYSDOT VMT data and national fleet fuel economy data.

Table 1
Greenhouse Gas Emission Inventory Summary
Transportation: On-Road Vehicles
North Country New York Region

| Fuel Type | North Country NY GHG Emissions (metric tons CO ₂ e/yr) | | | |
|----------------------|---|------------------|-----------------|------------------|
| | CO ₂ | N ₂ O | CH ₄ | Total |
| North Country | 2,071,792 | 5,187 | 1,777 | 2,078,756 |
| Gasoline | 1,539,705 | 4,078 | 1,381 | 1,545,164 |
| Ethanol | 112,050 | 56 | 38 | 112,144 |
| Diesel | 420,037 | 1,053 | 358 | 421,448 |
| Clinton | 433,423 | 1,086 | 372 | 434,881 |
| Gasoline | 314,718 | 834 | 282 | 315,834 |
| Ethanol | 22,903 | 11 | 8 | 22,922 |
| Diesel | 95,802 | 241 | 82 | 96,124 |
| Essex | 279,083 | 699 | 239 | 280,021 |
| Gasoline | 207,634 | 550 | 186 | 208,370 |
| Ethanol | 15,110 | 8 | 5 | 15,123 |
| Diesel | 56,339 | 142 | 48 | 56,529 |
| Franklin | 211,421 | 530 | 181 | 212,132 |
| Gasoline | 162,233 | 430 | 146 | 162,809 |
| Ethanol | 11,806 | 6 | 4 | 11,816 |
| Diesel | 37,382 | 94 | 32 | 37,507 |
| Hamilton | 45,861 | 111 | 39 | 46,011 |
| Gasoline | 35,170 | 93 | 32 | 35,295 |
| Ethanol | 2,559 | 1 | 1 | 2,562 |
| Diesel | 8,131 | 17 | 7 | 8,154 |
| Jefferson | 576,745 | 1,445 | 495 | 578,685 |
| Gasoline | 416,962 | 1,104 | 374 | 418,440 |
| Ethanol | 30,344 | 15 | 10 | 30,369 |
| Diesel | 129,439 | 326 | 110 | 129,875 |
| Lewis | 123,648 | 310 | 106 | 124,064 |
| Gasoline | 94,582 | 251 | 85 | 94,918 |
| Ethanol | 6,883 | 3 | 2 | 6,889 |
| Diesel | 22,183 | 56 | 19 | 22,257 |
| St Lawrence | 401,611 | 1,006 | 345 | 402,962 |
| Gasoline | 308,405 | 817 | 277 | 309,498 |
| Ethanol | 22,444 | 11 | 8 | 22,463 |
| Diesel | 70,762 | 178 | 60 | 71,001 |

1. Portion of Gasoline E-10.

components of gasoline E-10 (i.e., gasoline and ethanol) is based on a fraction of 90% gasoline and 10% ethanol.

Supporting data and calculations are provided in the following E&E Excel Workbook:

File Name:

NC Transportation - Onroad - 2013_1_21.xlsx

Date:

1/21/2013

North Country
Transportation
Emissions,
Rail

**GHG Emission Summary
Transportation: Railroads
North Country New York Region**

| County | Annual Diesel Consumption ¹ (gal/yr) | Annual diesel Consumption (MMBtu/yr) | Direct GHG Emissions from Diesel Train Engine Systems ² (metric tons CO ₂ e/yr) | | | |
|-------------------------------|--|---|--|------------------|-----------------|---------------|
| | | | CO ₂ | N ₂ O | CH ₄ | Total |
| Clinton | 661,618 | 91,303 | 6,753 | 17 | 6 | 6,776 |
| Essex | 808,641 | 111,592 | 8,253 | 21 | 7 | 8,281 |
| Franklin | 326,462 | 45,052 | 3,332 | 8 | 3 | 3,343 |
| Hamilton | 2,825 | 390 | 29 | 0.07 | 0.02 | 29 |
| Jefferson | 2,154,946 | 297,383 | 21,994 | 55 | 19 | 22,068 |
| Lewis | 64,745 | 8,935 | 661 | 2 | 0.6 | 663 |
| St. Lawrence | 2,977,165 | 410,849 | 30,386 | 76 | 26 | 30,489 |
| North Country NY Total | 6,996,402 | 965,503 | 71,409 | 180 | 61 | 71,649 |

Notes:

1. Diesel consumption based on NYSERDA Study of diesel consumption by rail systems in New York State in 2002. Fuel consumption data allocated spatially to counties by location of rail lines.

2. GHG emissions calculated by applying EPA emission factors to diesel consumption.

| County | Annual Electrical Consumption ¹ (kW-hr/yr) | Indirect GHG Emissions from Electric Train Systems ² (metric tons CO ₂ e/yr) | | | |
|-------------------------------|--|---|------------------|-----------------|-------|
| | | CO ₂ | N ₂ O | CH ₄ | Total |
| North Country NY Total | 0 | - | - | - | - |

| County | GHG Emissions from All Train Systems (metric tons CO ₂ e/yr) | | | |
|-------------------------------|--|------------------|-----------------|------------------|
| | CO ₂ | N ₂ O | CH ₄ | Total |
| Clinton | 91,303 | 6,753 | 17 | 98,073 |
| Essex | 111,592 | 8,253 | 21 | 119,867 |
| Franklin | 45,052 | 3,332 | 8 | 48,392 |
| Hamilton | 390 | 28.84 | 0.07 | 419 |
| Jefferson | 297,383 | 21,994 | 55 | 319,432 |
| Lewis | 8,935 | 661 | 1.7 | 9,597 |
| St. Lawrence | 410,849 | 30,386 | 76 | 441,312 |
| North Country NY Total | 965,503 | 71,409 | 180 | 1,037,092 |

| Power/Fuel Type | North Country NY Annual Energy Consumption (MMBtu/yr) |
|-----------------|--|
| Diesel | 965,503 |
| Electric | 0 |
| Total | 965,503 |

Notes:

1. Energy consumption for diesel systems calculated from diesel consumption based on NYSERDA Study of rail systems in New York State in 2002.

2. Energy consumption for electrical systems calculated by unit conversion.

Supporting data and calculations are provided in the following E&E Excel Workbook:

File Name:

NC Transportation - Rail - 2013_1_21.xlsx

Date:

1/21/2013

North Country
Transportation
Emissions,
Commercial
Marine

Table 1
GHG Emission Summary
Transportation: Commercial Marine Vessels
North Country New York Region

| Fuel Type | County | Annual Fuel Consumption ¹ (gal/yr) | Annual Fuel Consumption ¹ (MMBtu/yr) | GHG Emissions ^{2,3} (metric tons CO ₂ e/yr) | | | |
|-------------------|-------------------------------|--|--|---|------------------|-----------------|---------------|
| | | | | CO ₂ | N ₂ O | CH ₄ | Total |
| Diesel | Clinton | 0 | 0 | 0 | 0 | 0 | 0 |
| | Essex | 0 | 0 | 0 | 0 | 0 | 0 |
| | Franklin | 163,241 | 22,527 | 1,666 | 4 | 1 | 1,672 |
| | Hamilton | 0 | 0 | 0 | 0 | 0 | 0 |
| | Jefferson ² | 1,530,456 | 211,203 | 15,621 | 39 | 13 | 15,673 |
| | Lewis | 0 | 0 | 0 | 0 | 0 | 0 |
| | St. Lawrence ² | 1,113,059 | 153,602 | 11,360 | 29 | 10 | 11,399 |
| | North Country NY Total | 2,806,756 | 387,332 | 28,647 | 72 | 24 | 28,744 |
| Residual Fuel Oil | Clinton | 0 | 0 | 0 | 0 | 0 | 0 |
| | Essex | 0 | 0 | 0 | 0 | 0 | 0 |
| | Franklin | 0 | 0 | 0 | 0 | 0 | 0 |
| | Hamilton | 0 | 0 | 0 | 0 | 0 | 0 |
| | Jefferson ³ | 1,386,646 | 207,997 | 15,621 | 39 | 13 | 15,672 |
| | Lewis | 0 | 0 | 0 | 0 | 0 | 0 |
| | St. Lawrence ³ | 1,008,470 | 151,270 | 11,360 | 28 | 10 | 11,398 |
| | North Country NY Total | 2,395,116 | 359,267 | 26,981 | 67 | 23 | 27,070 |
| All Fuel Types | Clinton | - | 0 | - | - | - | - |
| | Essex | - | 0 | - | - | - | - |
| | Franklin | 163,241 | 22,527 | 1,666 | 4 | 1 | 1,672 |
| | Hamilton | - | 0 | - | - | - | - |
| | Jefferson | 2,917,102 | 419,200 | 31,241 | 78 | 26 | 31,346 |
| | Lewis | - | 0 | - | - | - | - |
| | St. Lawrence | 2,121,528 | 304,873 | 22,721 | 57 | 19 | 22,797 |
| | North Country NY Total | 5,201,871 | 746,600 | 55,628 | 139 | 47 | 55,814 |

Notes:

1. Fuel consumption estimated by dividing annual CO₂ emissions by corresponding fuel heat value and emission-factor-energy.
2. CO₂ emissions calculated by multiplying EPA estimated annual SO₂ emission rate by ratio of CO₂ to SO₂ emissions for applicable fuel.
3. N₂O and CH₄ emissions estimated using EPA emission factors and fuel consumption estimates.

| Fuel Type | Annual Energy Consumption ¹ (MMBtu/yr) |
|-------------------|--|
| Diesel | 387,332 |
| Residual Fuel Oil | 359,267 |
| Total | 746,600 |

Notes:

1. Annual energy consumption is based on projected fuel consumption.

Supporting data and calculations are provided in the following E&E Excel Workbook:

File Name:

NC Transportation - Com Marine - 2013_1_21.xlsx

Date:

1/21/2013

North Country
Transportation
Emissions, Aircraft

Table 1
Greenhouse Gas Emission Inventory Summary
Transportation: Aircraft
North Country New York Region

| County | Annual Jet Fuel Consumption ¹ (gal/yr) | Annual Energy Consumption ² (MMBtu/yr) | GHG Emissions ^{3,4} (metric tons CO ₂ e/yr) | | | |
|-------------------------------|--|--|---|------------------|-----------------|---------------|
| | | | CO ₂ | N ₂ O | CH ₄ | Total |
| Clinton | 266,172 | 35,933 | 2,557 | 6.7 | 2.3 | 2,566 |
| Essex | 45,019 | 6,078 | 599 | 1 | 0.4 | 601 |
| Franklin | 37,133 | 5,013 | 355 | 0.9 | 0.3 | 356 |
| Hamilton | 7,887 | 1,065 | 75 | 0.2 | 0.07 | 75 |
| Jefferson | 737,396 | 99,548 | 7,082 | 19 | 6 | 7,107 |
| Lewis | 15,116 | 2,041 | 144 | 0.4 | 0.1 | 145 |
| St. Lawrence | 56,849 | 7,675 | 545 | 1 | 0.5 | 547 |
| North Country NY Total | 1,165,572 | 157,352 | 11,357 | 29 | 10 | 11,396 |

Notes:

1. Jet fuel consumption estimated using the FAA's EDMS model with data input of total landing and take off cycles of specific aircraft types at each airport in each county.
2. Annual energy consumption is based on projected fuel consumption as estimated using FAA's EDMS model.
3. CO₂ emissions estimated using the FAA's EDMS model with data input of total landing and take off cycles of specific aircraft types at each airport in each county.
4. N₂O and CH₄ emissions estimated using using EPA emission factors and jet fuel consumption estimates.

Supporting data and calculations are provided in the following E&E Excel Workbook:

File Name:

MV Transportation - Aircraft - 2013_1_21.xlsx

Date:

1/21/2013

North Country
Transportation
Emissions, Non-
road

**GHG Emissions Summary
Transportation: Non-Road Equipment
North Country New York Region**

| County | Energy Consumption (MMBtu/yr) | GHG Emissions ^{1,2} (metric tons CO ₂ e/yr) | | | |
|-------------------------------|-------------------------------|---|------------------|-----------------|----------------|
| | | CO ₂ | N ₂ O | CH ₄ | Total |
| Clinton | 974,219 | 69,236 | 180 | 61 | 69,477 |
| Essex | 1,057,070 | 75,142 | 196 | 67 | 75,405 |
| Franklin | 722,521 | 51,545 | 134 | 45 | 51,725 |
| Hamilton | 1,411,596 | 99,450 | 263 | 89 | 99,802 |
| Jefferson | 1,792,552 | 128,332 | 333 | 113 | 128,777 |
| Lewis | 570,662 | 40,825 | 106 | 36 | 40,967 |
| St. Lawrence | 1,401,551 | 100,118 | 260 | 88 | 100,466 |
| North Country NY Total | 7,930,171 | 564,649 | 1,472 | 499 | 566,620 |

Notes:

1. CO₂ emissions based on NYSDEC runs of the NONROAD emission model for the state emission inventory for Year 2007.
2. N₂O and CH₄ emissions based the use of EPA emission factors for N₂O and CH₄ based on fuel combustion. Fuel consumption estimated with reserve application of CO₂ emission factors (for fuel) to CO₂ emissions.

| Fuel Type | Annual Fuel Consumption ¹ | | GHG Emissions ^{2,3} (metric tons CO ₂ e/yr) | | | |
|--------------|--------------------------------------|------------|---|------------------|-----------------|----------------|
| | (scf/yr) | (gal/yr) | CO ₂ | N ₂ O | CH ₄ | Total |
| CNG | 19,857,515 | - | 1,082 | 1 | 0 | 1,083 |
| Diesel | - | 19,067,490 | 194,612 | 489 | 166 | 195,267 |
| Gasoline | - | 40,351,785 | 354,188 | 938 | 318 | 355,444 |
| LPG | - | 2,548,596 | 14,767 | 44 | 15 | 14,825 |
| TOTAL | - | - | 564,649 | 1,472 | 499 | 566,620 |

Notes:

1. Fuel consumption estimated with reserve application of CO₂ emission factors (for fuel) to CO₂ emissions.
2. CO₂ emissions based on NYSDEC runs of the NONROAD emission model for the state emission inventory for Year 2007.
3. N₂O and CH₄ emissions based the use of EPA emission factors for N₂O and CH₄ based on fuel combustion.

| Fuel Type | North Country NY Annual Energy Consumption ¹ (MMBtu/yr) |
|--------------|--|
| CNG | 20,414 |
| Diesel | 2,631,314 |
| Gasoline | 5,043,973 |
| LPG | 234,471 |
| Total | 7,930,171 |

Notes:

1. Annual energy consumption is based on projected fuel consumption calculated from NYSDEC CO₂ emission estimates.

Supporting data and calculations are provided in the following E&E Excel Workbook:

File Name:

NC Transportation - Nonroad - 2013_1_21.xlsx

Date:

1/21/2013

North Country
Waste (Materials)
Emissions

Waste Disposal Emissions

| | Regional average Municipal Solid Waste (MSW) generated per capita (short tons) | Total MSW (Short tons) ³ | Population | CO2e (Metric Tons), 2010 ^{1,2} | | | | | |
|--|--|--|------------|---|-----------------|------------------|-----------------------|---------------------------|--|
| | | | | Nonbiogenic CO2 | CH ₄ | N ₂ O | Total non biogenic | CO2 biogenic ⁴ | |
| New York State | | | | | | | | | |
| North Country: Direct Emissions¹ | | | | | | | | | |
| Clinton | 1.87 | 153,644 | 82,128 | 166 | 120,582 | 0 | 120,749 | 0 | |
| Essex | - | - | 39,370 | 40 | 32,027 | 0 | 32,066 | 0 | |
| Franklin | 0.95 | 49,181 | 51,599 | 0 | 0 | 0 | 0 | 0 | |
| Hamilton | - | - | 4,836 | 47 | 43,349 | 0 | 43,396 | 0 | |
| Jefferson | 1.65 | 192,131 | 116,229 | 0 | 0 | 0 | 0 | 0 | |
| Lewis | - | - | 27,087 | 80 | 45,206 | 0 | 45,286 | 0 | |
| St. Lawrence | - | - | 111,944 | 0 | 0 | 0 | 0 | 0 | |
| North Country: Indirect Emissions² | | | | | | | | | |
| Clinton | 0.80 | 65,296.10 | 82,128 | 28 | 19,935 | 0 | 19,963 | 0 | |
| Essex | 0.57 | 22,458.40 | 39,370 | 9 | 6,857 | 0 | 6,866 | 0 | |
| Franklin | 0.70 | 36,190.60 | 51,599 | 15 | 11,049 | 0 | 11,064 | 0 | |
| Hamilton | 1.64 | 7,935.91 | 4,836 | 3 | 2,423 | 0 | 2,426 | 0 | |
| Jefferson | 0.86 | 100,486.00 | 116,229 | 42 | 30,679 | 0 | 30,721 | 0 | |
| Lewis | 0.61 | 16,483.00 | 27,087 | 7 | 5,032 | 0 | 5,039 | 0 | |
| St. Lawrence | 0.62 | 69,423.20 | 111,944 | 29 | 21,195 | 0 | 21,225 | 0 | |

Notes

1. Total emissions as reported for all waste facilities in North Country Region, 2010 EPA MRR GHG Reporting Data
2. Indirect emissions calculated based on average annual emissions per ton of waste from Waste Disposal Facilities in the Region, allocated based on reported waste generated by each county
3. Waste generated and received data provided by NYSEDA to NYS Protocol Working Group, 20122010_DEC_Landfill_and_WTE_data.xlsx, summary of DEC reported data
4. Biogenic emissions include emissions from electric generation from landfill gas and portion of Waste-to-energy combustion (as reported in EPA MRR GHG Reporting Data)

Supporting data and calculations are provided in the following E&E Excel Workbook:

File Name:

NC Waste 1_21.xlsx

Date:

1/21/2013

North Country
Wastewater
Emissions

Wastewater Treatment Facility Emissions

| | Wastewater volume flow (MGD) ¹ | Number of Plants ¹ | Population ² | CO ₂ e (Metric Tons) ² | | | |
|-----------------------------------|---|-------------------------------|-------------------------|--|------------------|------------------|--------------------------------------|
| | | | | CO ₂ | CH ₄ | N ₂ O | Total CO ₂ e ³ |
| New York State² | 3,693.65 | 610 | 19,378,102 | - | 1,310,000 | 580,000 | 1,900,000 |
| North Country² | 87.77 | 83 | 433,193 | - | 30,000 | 10,000 | 40,000 |
| Clinton ⁴ | 21.321 | 11 | 82,128 | | 7,288 | 2,429 | 9,717 |
| Essex ⁴ | 9.230 | 12 | 39,370 | | 3,155 | 1,052 | 4,206 |
| Franklin ⁴ | 7.516 | 6 | 51,599 | | 2,569 | 856 | 3,425 |
| Hamilton ⁴ | 0.220 | 2 | 4,836 | | 75 | 25 | 100 |
| Jefferson ⁴ | 24.968 | 21 | 116,229 | | 8,534 | 2,845 | 11,379 |
| Lewis ⁴ | 1.552 | 8 | 27,087 | | 530 | 177 | 707 |
| St. Lawrence ⁴ | 22.963 | 23 | 111,944 | | 7,849 | 2,616 | 10,465 |

Notes

¹Descriptive Data of Municipal Wastewater Treatment Plants in New York State, NYSDEC, January 2004

²State and NC Totals calculated using the EPA State Inventory Tool, Wastewater module, for Munciple waterwater only, using NYS defaults, 2010 population from 2010 US Census.

³State and NC totals reported as calculated by using the EPA State Inventory Tool--may not be exact sum of other rows due to rounding.

⁴County totals calculated based on ratio of 2004 NC wastewater volumes and EPA State Inventory Tool results for NC. Significant figures of SIT (million MT, to 100ths) do not provide totals for the smaller population numbers.

Supporting data and calculations are provided in the following E&E Excel Workbook:

File Name:

NC Waste_water9_21.xlsx

Date:

9/28/2012

North Country
Agriculture
Emissions

Manure Management Emissions

| | Population (# of animals) ¹ | Number of Animal Farms ¹ | CO ₂ e (Metric Tons) ² | | | |
|-----------------------|--|-------------------------------------|--|-----------------|------------------|-------------------------|
| | | | CO ₂ | CH ₄ | N ₂ O | Total CO ₂ e |
| New York State | | | | | | |
| North Country | 286,958 | 5,325 | | 88,631 | 18,577 | 107,207 |
| Clinton | 35,622 | 615 | | 12,881 | 2,728 | 15,609 |
| Essex | 7,662 | 256 | | 1,310 | 262 | 1,572 |
| Franklin | 38,390 | 788 | | 10,745 | 2,240 | 12,985 |
| Hamilton | 271 | 14 | | 1 | 0 | 1 |
| Jefferson | 66,724 | 1,024 | | 21,610 | 4,522 | 26,132 |
| Lewis | 54,970 | 803 | | 19,171 | 4,078 | 23,249 |
| St. Lawrence | 83,319 | 1,825 | | 22,914 | 4,746 | 27,660 |

Note

1. The animal and farm number data is from 2007 USDA Agricultural Census.

2.CO₂e calculation is based on the animal number and the factors from 2010 USEPA Draft Regional Greenhouse Gas Inventory Guidance and 2006 IPCC Guidelines for National Greenhouse Gas Inventories .

Enteric Fermentation Emissions

| | Population (# of animals) ¹ | Number of Animal Farms ¹ | CO ₂ e (Metric Tons) ² | | | |
|-----------------------|--|-------------------------------------|--|-----------------|------------------|-------------------------|
| | | | CO ₂ | CH ₄ | N ₂ O | Total CO ₂ e |
| New York State | | | | | | |
| North Country | 286,958 | 5,325 | | 519,547 | | 519,547 |
| Clinton | 35,622 | 615 | | 72,623 | | 72,623 |
| Essex | 7,662 | 256 | | 8,834 | | 8,834 |
| Franklin | 38,390 | 788 | | 64,166 | | 64,166 |
| Hamilton | 271 | 14 | | 19 | | 19 |
| Jefferson | 66,724 | 1,024 | | 127,471 | | 127,471 |
| Lewis | 54,970 | 803 | | 106,645 | | 106,645 |
| St. Lawrence | 83,319 | 1,825 | | 139,790 | | 139,790 |

Notes

1. The animal and farm number data is from 2007 USDA Agricultural Census.

2.CO₂e calculation is based on the animal number and the factors from 2010 USEPA Draft Regional Greenhouse Gas Inventory Guidance.

Agricultural Soils Emissions

| | Cropland Harvested (acres) ¹ | CO ₂ e (Metric Tons) ² | | | Total CO ₂ e |
|-----------------------|---|--|-----------------|------------------|-------------------------|
| | | CO ₂ | CH ₄ | N ₂ O | |
| New York State | | | | | |
| North Country | 514,867 | | | 31,506 | 31,506 |
| Clinton | 62,157 | | | 3,796 | 3,796 |
| Essex | 16,033 | | | 1,000 | 1,000 |
| Franklin | 59,079 | | | 3,608 | 3,608 |
| Hamilton | 57 | | | 7 | 7 |
| Jefferson | 147,726 | | | 9,022 | 9,022 |
| Lewis | 82,977 | | | 5,068 | 5,068 |
| St. Lawrence | 146,838 | | | 9,006 | 9,006 |

Notes

1. The cropland harvested data for synthetic fertilizer calculation is from 2007 US Agricultural Census. Assumed most of fertilizer are used on harvested cropland.

2.CO₂e calculation is from organic fertilizer N₂O emission with data sources from NYSDEC7/23/2012 and synthetic fertilizer N₂O emission with data sources from 2007 US Agricultural Census and EPA Commercial Fertilizer Purchased (http://water.epa.gov/scitech/swguidance/standards/criteria/nutrients/dataset_commercial.cfm).

Supporting data and calculations are provided in the following E&E Excel Workbook:
 File Name:
NC_Agriculture_092012.xlsx
 Date:
9/28/12

North Country
Forestry Emissions

Carbon Sequestration in Forests

| | Forest Land (Acres) ¹ | Forest Land (km ²) | Total Carbon Sequestration (metric tons C) ² | Total Carbon Sequestration (metric tons CO ₂) |
|-----------------------|----------------------------------|--------------------------------|---|---|
| New York State | | | | |
| North Country | 5,895,097 | 23,857 | 299,243,250 | 1,098,222,727 |
| Clinton County | 492,561 | 1,993 | 23,903,202 | 87,724,751 |
| Essex County | 1,034,865 | 4,188 | 53,452,812 | 196,171,820 |
| Franklin County | 882,442 | 3,571 | 43,012,451 | 157,855,694 |
| Hamilton County | 1,094,916 | 4,431 | 57,968,128 | 212,743,029 |
| Jefferson County | 427,360 | 1,729 | 19,910,750 | 73,072,453 |
| Lewis County | 625,369 | 2,531 | 33,181,610 | 121,776,510 |
| St. Lawrence County | 1,337,585 | 5,413 | 67,814,297 | 248,878,471 |

Notes

1.The forest land data is from Forest Inventory Data Online (FIDO) FIA Standard Reports, New York Current Area, 2010.

2.The total carbon sequestration is calculated based on the carbon stock factor from COLE 1605 (b) Report for New York, July 24, 2012 and the forest land.

Carbon Sequestration in Urban Forests

| | Urban Land Area (km ²) ¹ | Tree Canopy Cover (%) ² | Total Carbon Sequestration (metric tons C) ³ | Total Carbon Sequestration (metric tons CO ₂) |
|-----------------------|---|------------------------------------|---|---|
| New York State | | | | |
| North Country | | | 51,547 | 189,177 |
| Clinton County | 54 | 38% | 12,041 | 44,191 |
| Essex County | 19 | 57% | 4,236 | 15,548 |
| Franklin County | 31 | 47% | 6,807 | 24,981 |
| Hamilton County | n/a | n/a | n/a | n/a |
| Jefferson County | 76 | 29% | 16,891 | 61,989 |
| Lewis County | 3 | 13% | 779 | 2,858 |
| St. Lawrence County | 48 | 27% | 10,793 | 39,610 |

Notes

1. The urban land area data is from 2000 US Census.

2. The tree canopy cover percentage data is from provided by Eric J. Greenfield, US Department of Agriculture Forest Service, Syracuse, NY on August 1, 2012.

3. The total carbon sequestration is calculated based on the urban land area, tree canopy coverage and the national average net sequestration rate.

Supporting data and calculations are provided in the following E&E Excel Workbook:

File Name:

NC_Forest_092012.xlsx

Date:

9/28/12

North Country
QA/QC Emissions

REDC Emissions By Source and Sector
Year: 2010

REDC / County Name **North Country**

Color Code

REQUIRED, though some data may be zero or considered to small to count
OPTIONAL
DO NOT Report Data in these cells

| DRAFT Reporting Template CGC. Emissions in MTCDE | | | | | Rolled Up? | Related GHG Metrics / Activity Data | | | |
|--|--|---------|---------|---------|------------|-------------------------------------|-------------|-------|-----------|
| | | Scope 1 | Scope 2 | Scope 3 | | Biogenic | Metric | Unit | Value |
| Built Environment | | | | | | | | | |
| Residential Energy Consumption | | | | | | | | | |
| NC Electricity Consumption | Electricity / Steam | | 325,724 | 0 | - | Yes | Consumption | MMBTU | 4,896,765 |
| NC Direct Residential Fuel Consumption | Natural Gas | 290,410 | | 0 | - | Yes | Consumption | MMBTU | 5,471,996 |
| NC Direct Residential Fuel Consumption | Propane / LPG | 103,286 | | 0 | - | Yes | Consumption | MMBTU | 1,428,293 |
| NC Direct Residential Fuel Consumption | Distillate Fuel Oil (#1, #2, Kerosene) | 432,290 | | 0 | - | Yes | Consumption | MMBTU | 5,825,306 |
| NC Direct Residential Fuel Consumption | Wood | 16,477 | | 0 | 323,887 | Yes | Consumption | MMBTU | 8,347,161 |
| Commercial Energy Consumption | | | | | | | | | |
| NC Electricity Consumption | Electricity / Steam | | 178,964 | 0 | - | Yes | Consumption | MMBTU | 2,690,450 |
| NC Commercial Direct Fuel Consumption | Natural Gas | 204,913 | | 0 | - | Yes | Consumption | MMBTU | 3,861,032 |
| NC Commercial Direct Fuel Consumption | Propane / LPG | 40,396 | | 0 | - | Yes | Consumption | MMBTU | 638,891 |
| NC Commercial Direct Fuel Consumption | Distillate Fuel Oil (#1, #2, Kerosene) | 395,820 | | 0 | - | Yes | Consumption | MMBTU | 5,333,853 |
| NC Commercial Direct Fuel Consumption | Residual Fuel Oil (#4 and #6) | - | | 0 | - | Yes | Consumption | MMBTU | - |
| NC Commercial Direct Fuel Consumption | Coal | 357 | | 0 | - | Yes | Consumption | MMBTU | 3,478 |
| NC Commercial Direct Fuel Consumption | Wood | 6,474 | | 0 | 307,647 | Yes | Consumption | MMBTU | 3,279,824 |
| Industrial Energy Consumption | | | | | | | | | |
| NC Electricity Consumption | Electricity / Steam | | 269,206 | 0 | - | Yes | Consumption | MMBTU | 4,047,096 |
| NC Industrial Title V Consumption | Natural Gas | 186,750 | | 0 | - | Yes | Consumption | MMBTU | 3,518,810 |
| NC Industrial Title V Consumption | Propane / LPG | 1,701 | | 0 | - | Yes | Consumption | MMBTU | 26,909 |
| NC Industrial Title V Consumption | Distillate Fuel Oil (#1, #2, Kerosene) | 1,285 | | 0 | - | Yes | Consumption | MMBTU | 17,318 |
| NC Industrial Title V Consumption | Residual Fuel Oil (#4 and #6) | 262,255 | | 0 | - | Yes | Consumption | MMBTU | 3,480,538 |

REDC Emissions By Source and Sector
Year: 2010

REDC / County Name **North Country**

Color Code

| | |
|--|--|
| | REQUIRED, though some data may be zero or considered to small to count |
| | OPTIONAL |
| | DO NOT Report Data in these cells |

| DRAFT Reporting Template CGC. Emissions in MTCDE | | | | | | Related GHG Metrics / Activity Data | | | |
|--|-------------------------------------|-----------|---------|---------|----------|-------------------------------------|---------------|-------|------------|
| | | Scope 1 | Scope 2 | Scope 3 | Biogenic | Rolled Up? | Metric | Unit | Value |
| NC Industrial Title V Consumption | Coal | - | | 0 | - | Yes | Consumption | MMBTU | - |
| NC Industrial Title V Consumption | Wood | 1,928 | | 0 | 91,613 | Yes | Consumption | MMBTU | 976,685 |
| Energy Generation and Supply | | | | 0 | | | | | |
| NC Elec Generation GHG Analysis | Coal and Coke | 106,709 | | 0 | - | No | Consumption | MMBTU | 1,111,229 |
| NC Elec Generation GHG Analysis | Natural Gas | 214,993 | | 0 | - | No | Consumption | MMBTU | 4,050,971 |
| NC Elec Generation GHG Analysis | Distillate Fuel Oil (#1, #2 and #4) | 954 | | 0 | - | No | Consumption | MMBTU | 12,861 |
| NC Elec Generation GHG Analysis | Residual Fuel Oil (#4 and #6) | 81,846 | | 0 | - | No | Consumption | MMBTU | 1,086,225 |
| NC Elec Generation GHG Analysis | Wood / Biomass | 7,106 | | 0 | 337,659 | No | Consumption | MMBTU | 3,599,772 |
| NC Elec Generation GHG Analysis | MSW and landfill emissions | 223 | | 0 | 44,300 | No | MSW Combusted | MMBTU | 850,779 |
| NC Elec Generation GHG Analysis | Other | 2,978 | | 0 | - | | | | 33,859 |
| NC Elec Generation GHG Analysis | Electricity T/D Losses | | 45,041 | 0 | - | Yes | Losses | MMBTU | 677,117 |
| NC Elec Generation GHG Analysis and NC Direct Fuel Consumption | Natural Gas T/D Losses | 126,913 | | 0 | - | Yes | Losses | MMBTU | - |
| NC Electricity Consumption | Use of SF6 in the Utility Industry | 10,359 | | 0 | - | Yes | Consumption | MMBTU | - |
| Industrial Processes | | | | 0 | | | | | |
| Not Reported | Cement Production | - | | 0 | - | Yes | | | - |
| NC Industrial Sources | Iron and Steel Production | - | | 0 | - | Yes | | | - |
| NC Industrial Sources | Ferroalloy Production | - | | 0 | - | Yes | | | - |
| Not Reported | Aluminum Production | 234,165 | | 0 | - | Yes | | | - |
| Not Reported | Paper and Pulp | 33,205 | | 0 | - | Yes | | | - |
| Not Reported | Limestone Use | - | | 0 | - | Yes | | | - |
| Not Reported | Soda Ash Use | - | | 0 | - | Yes | | | - |
| Not Reported | Semi-Conductor Manufacturing | - | | 0 | - | Yes | | | - |
| Not Reported | Glass Production | - | | 0 | - | Yes | | | - |
| Not Reported | Chemical Manufacturing | - | | 0 | - | Yes | | | - |
| Product Use (Ozone Depleting Substances) | | | | 0 | | | | | |
| NC Industrial Sources | All Refrigerants- except SF6 | 99,181 | | 0 | - | Yes | | | - |
| Transportation Energy | | | | 0 | | | | | |
| NC Emission Summary - Onroad | Motor Gasoline (E-10) | 1,545,164 | | 0 | 112,144 | Yes | Consumption | MMBTU | 23,564,075 |

Protocol Compliance Report

| Summary of Protocol Decisions for Required Tier II Source (Green Box Sources) "Rec" - recommended, "Alt" means acceptable alternative | | Adherence | | Brief Description of Method and Issues |
|---|--|-----------|----|--|
| | | Yes | No | |
| Built Environment | | | | |
| NC Electricity Consumption | (Rec) - Utility Supplied Data, (Alt 1) - extrapolation from partial set, (Alt 2) EIA allocation based HDD and Housing Unit Size | X | | Actual electricity sales data is provided by National Grid, NYSEG, and municipal utilities. |
| NC Direct Residential Fuel Consumption | (Rec) - Utility Supplied Data, (Alt 1) - extrapolation from partial set, (Alt 2) EIA allocation based HDD and Housing Unit Size | X | | As stated |
| NC Direct Residential Fuel Consumption | (Rec) Allocated EIA SEDS residential state consumption to counties based on Home Heating Fuel, HDD, and Housing Unit Size | | | As stated |
| NC Direct Residential Fuel Consumption | (Rec) Allocated EIA SEDS residential state consumption to counties based on Home Heating Fuel, HDD, and Housing Unit Size | | | As stated |
| NC Direct Residential Fuel Consumption | (Rec) Allocated EIA SEDS residential state consumption to counties based on Home Heating Fuel, HDD, and Housing Unit Size | | | As stated |
| NC Electricity Consumption | (Rec) - Utility Supplied Data, (Alt 1) - extrapolation from partial set, (Alt 2) EIA allocation based on Fuel Oil Recommended method. | X | | Actual electricity sales data is provided by National Grid, NYSEG, and municipal utilities. |
| NC Commercial Direct Fuel Consumption | (Rec) - Utility Supplied Data, (Alt 1) - extrapolation from partial set, (Alt 2) EIA allocation based on Fuel Oil Recommended method. | X | | As stated |
| NC Commercial Direct Fuel Consumption | (Rec) Allocated EIA SEDS commercial state consumption to counties based on Home Heating Fuel, HDD, employment and Commercial Square Footage. (Alt) Allocation based on Home Heating, HDD, and Employment only. | X | | As stated |
| NC Commercial Direct Fuel Consumption | (Rec) Allocated EIA SEDS commercial state consumption to counties based on Home Heating Fuel, HDD, employment and Commercial Square Footage. (Alt) Allocation based on Home Heating, HDD, and Employment only. | X | | As stated |
| NC Commercial Direct Fuel Consumption | (Rec) Allocated EIA SEDS commercial state consumption to counties based on Home Heating Fuel, HDD, employment and Commercial Square Footage. (Alt) Allocation based on Home Heating, HDD, and Employment only. | X | | As stated |
| NC Commercial Direct Fuel Consumption | (Rec) Allocated EIA SEDS commercial state consumption to counties based on Home Heating Fuel, HDD, employment and Commercial Square Footage. (Alt) Allocation based on Home Heating, HDD, and Employment only. | X | | As stated |
| NC Commercial Direct Fuel Consumption | (Rec) Allocated EIA SEDS commercial state consumption to counties based on Home Heating Fuel, HDD, employment and Commercial Square Footage. (Alt) Allocation based on Home Heating, HDD, and Employment only. | X | | As stated |
| NC Electricity Consumption | (Rec) - Utility Supplied Data, (Alt 1) - extrapolation from partial set, (Alt 2) allocate SEDS EIA data based allocated by industrial employment | X | | Actual electricity sales data is provided by National Grid, NYSEG, and municipal utilities. |
| NC Industrial Title V Consumption | (Rec) - Pie Slice Method. (1) Allocate directly all Title 5 / MMR reporting industrial facilities to the counties / municipalities. (2) compute total statewide industrial fuel use for all Title 5 / EPA MMR reporting facilities and subtract that from the EIA SEDS reported fuel use for the industrial sector (3) allocate the balance from step 2 to counties by industrial employment for manufacturing. The balance is assumed to represent smaller industry that does not report under Title 5 regulations. | | X | |
| NC Industrial Title V Consumption | (Rec) - Pie Slice Method. (1) Allocate directly all Title 5 / MMR reporting industrial facilities to the counties / municipalities. (2) compute total statewide industrial fuel use for all Title 5 / EPA MMR reporting facilities and subtract that from the EIA SEDS reported fuel use for the industrial sector (3) allocate the balance from step 2 to counties by industrial employment for manufacturing. The balance is assumed to represent smaller industry that does not report under Title 5 regulations. | | X | |
| NC Industrial Title V Consumption | (Rec) - Pie Slice Method. (1) Allocate directly all Title 5 / MMR reporting industrial facilities to the counties / municipalities. (2) compute total statewide industrial fuel use for all Title 5 / EPA MMR reporting facilities and subtract that from the EIA SEDS reported fuel use for the industrial sector (3) allocate the balance from step 2 to counties by industrial employment for manufacturing. The balance is assumed to represent smaller industry that does not report under Title 5 regulations. | | X | Direct energy use as reported for Title 5 industrial facilities only, additional allocation based on statewide emissions by industrial employees is not representative of the region, therefore not included |
| NC Industrial Title V Consumption | (Rec) - Pie Slice Method. (1) Allocate directly all Title 5 / MMR reporting industrial facilities to the counties / municipalities. (2) compute total statewide industrial fuel use for all Title 5 / EPA MMR reporting facilities and subtract that from the EIA SEDS reported fuel use for the industrial sector (3) allocate the balance from step 2 to counties by industrial employment for manufacturing. The balance is assumed to represent smaller industry that does not report under Title 5 regulations. | | X | |

Protocol Compliance Report

| | Summary of Protocol Decisions for Required Tier II Source (Green Box Sources) "Rec" - recommended, "Alt" means acceptable alternative | Adherence |
|--|--|--|
| NC Industrial Title V Consumption | (Rec) - Pie Slice Method. (1) Allocate directly all Title 5 / MMR reporting industrial facilities to the counties / municipalities. (2) compute total statewide industrial fuel use for all Title 5 / EPA MMR reporting facilities and subtract that from the EIA SEDS reported fuel use for the industrial sector (3) allocate the balance from step 2 to counties by industrial employment for manufacturing. The balance is assumed to represent smaller industry that does not report under Title 5 regulations. | X |
| NC Industrial Title V Consumption | (Rec) - Pie Slice Method. (1) Allocate directly all Title 5 / MMR reporting industrial facilities to the counties / municipalities. (2) compute total statewide industrial fuel use for all Title 5 / EPA MMR reporting facilities and subtract that from the EIA SEDS reported fuel use for the industrial sector (3) allocate the balance from step 2 to counties by industrial employment for manufacturing. The balance is assumed to represent smaller industry that does not report under Title 5 regulations. | X |
| Energy Generation and Supply | | |
| NC Elec Generation GHG Analysis | (Rec) - Direct Allocation from Title 5, MMR, or EIA 923 Database. All Grid Connected Power Generators with Nameplate capacity of 1 MW or greater shall be reported. For overlap, prioritize EIA 923 Database. | X EIA 923 database used |
| NC Elec Generation GHG Analysis | (Rec) - Direct Allocation from Title 5, MMR, or EIA 923 Database. All Grid Connected Power Generators with Nameplate capacity of 1 MW or greater shall be reported. For overlap, prioritize EIA 923 Database. | X EIA 923 database used |
| NC Elec Generation GHG Analysis | (Rec) - Direct Allocation from Title 5, MMR, or EIA 923 Database. All Grid Connected Power Generators with Nameplate capacity of 1 MW or greater shall be reported. For overlap, prioritize EIA 923 Database. | X EIA 923 database used |
| NC Elec Generation GHG Analysis | (Rec) - Direct Allocation from Title 5, MMR, or EIA 923 Database. All Grid Connected Power Generators with Nameplate capacity of 1 MW or greater shall be reported. For overlap, prioritize EIA 923 Database. | X EIA 923 database used |
| NC Elec Generation GHG Analysis | (Rec) - Direct Allocation from Title 5, MMR, or EIA 923 Database. All Grid Connected Power Generators with Nameplate capacity of 1 MW or greater shall be reported. Wood CO2 emissions reported optionally as biogenic CO2, CH4 and N2 Emissions required to be reported to Scope 1 | X EIA 923 database used |
| NC Elec Generation GHG Analysis | (Rec) - Direct Allocation from Title 5, MMR, or EIA 923 Database. All Grid Connected Power Generators with Nameplate capacity of 1 MW or greater shall be reported. MSW CO2 emissions split as 44% reported as Scope 1 as part of non-biogenic (plastics etc), and 56% can be reported as option biogenic based data for 2005 on http://www.eia.gov/cneaf/solar.renewables/page/mswaste/msw_report.html . All CH4 and N2O shall be reported under required Scope 1. | X EIA 923 database used |
| NC Elec Generation GHG Analysis | (Rec) - Acquire utility specific estimate of T/D (in %) and apply that to all consumption (res/commercial/industrial). Report emissions as Scope 2 using regional EGRID emission factors consistent with all Scope 2 calculations. (Alt) use a statewide average T/D loss of 5.28% as documented by EPA's EGRID reporting for New York. | X Alternative Method As stated |
| NC Elec Generation GHG Analysis and NC Direct Fuel Consumption | (Rec) - Acquire utility specific estimate of T/D (in %), compute as percentage of total residential/commercial/industrial/energy generation. Report as Scope 1 CH4 emissions. (Alt) use a statewide average of 1.8% as documented by National Grid in 2010 PSC Reporting. | |
| NC Electricity Consumption | (Rec) - acquire utility specific estimate and report as SF6. (Alt) Apportion NYSERDA 2009 Emission Inventory Total for the state to counties based ration of EIA reported total electricity demand to computed regional or county demand for all sectors. | X Based on conversations with P Groth and J Yienger, used national 2010 emission inventory total |
| Industrial Processes | | |
| Not Reported | | X Nothing to report |
| NC Industrial Sources | | X Nothing to report |
| NC Industrial Sources | | X Nothing to report |
| Not Reported | | X As stated |
| Not Reported | | X As stated |
| Not Reported | (Rec) Direct Allocation from from EPA MMR only. Small Sources to not to be included at this time. | X Nothing to report |
| Not Reported | | X Nothing to report |
| Not Reported | | X Nothing to report |
| Not Reported | | X Nothing to report |
| Not Reported | | X Nothing to report |
| Not Reported | | X Nothing to report |
| Product Use (Ozone Depleting Substances) | | |
| NC Industrial Sources | (Rec) Use EPA 2009 Draft Guidance method. Allocate national per/capita emissions to counties based on population. Methods include mobile refrigeration | X As stated |
| Transportation Energy | | |
| NC Emission Summary - Onroad | (Rec) Use MPO-provided VMT data local to your region, supplemented by DOT provided data (on Wiggio). Use regional-specific data on fleet profile and national fleet fuel economy data (on Wiggio) to estimate county-level GHG emissions. (Alt) Use EPA MOVES GHG module customized for your region-appropriate if you are running this model. Assume on-road fuel is 10% ethanol and report this fraction as Optional biogenic emissions. | X As stated |

Protocol Compliance Report

| Summary of Protocol Decisions for Required Tier II Source (Green Box Sources) "Rec" - recommended, "Alt" means acceptable alternative | | Adherence | |
|---|---|-----------|---|
| NC Emission Summary - Onroad | (Rec) Use MPO-provided VMT data local to your region, supplemented by DOT provided data (on Wigigio). Use regional-specific data on fleet profile and national fleet fuel economy data (on Wigigio) to estimate county-level GHG emissions. (Alt) Use EPA MOVES GHG module customized for your region-appropriate if you are running this model. Assume on-road fuel is 10% ethanol and report this fraction as Optional biogenic emissions on the ethanol line item. | X | As stated |
| Not Reported | Optional- Include regional E-85 consumption if you have it, and debit against your gasoline estimate create using VMT. Allocate 15% as gasoline to be reported as Scope 1, and 85% as ethanol to be reported as optional biogenic. | X | Not available |
| Not Reported | Optional- Include regional biodiesel consumption if you have it, and debit against your diesel estimate create using VMT. Because biodiesel blends change, allocate option biogenic component on this line item only, and retain the diesel fraction on the diesel line item. | X | Not available |
| Not Reported | Today this will be zero, but as NYSERDA pushes to electrify on-road transportation we will want to report here, debiting against electricity consumption in the other sectors as appropriate. | X | Not available |
| NC Emission Summary - Rail | Freight and Passenger. (Rec) Use direct provider fuel consumption data allocated spatially to location of routes (Alt) Use Nyserda 2002 estimates of Diesel consumption by county directly. | X | As stated |
| NC Emission Summary - Rail | Passenger and Commuter (Rec) Use direct provider electricity consumption data allocated spatially to location of routes (Alt) None identified. | X | Not applicable |
| NC Emission Summary -Com Marine | | X | As stated, except recreational boating included in non-road data |
| NC Emission Summary -Com Marine | Rec - USE NYSDEC 2007 data from the state emission inventory for the small and pleasure craft categories reported by county (data on Wigigio). For commercial distillate and bunkers, No consensus method identified- please document methods used. | X | As stated, except recreational boating included in non-road data |
| NC Emission Summary -Com Marine | | X | As stated, except recreational boating included in non-road data |
| NC Emission Summary-Aircraft | Optional Scope 1- Estimate Landing and Take off Cycle emissions using a dispersion model such as EDM5, or with related data from the NYSDEC for the 2007 state emission inventory. Optional Scope 3, use FAA statistics on departure miles from regional airport, allocate jet fuel use to it, then allocate to counties by fraction of population served | X | Scope 1 option, using EDM5. Total added to roll up totals discussed within Sustainability Plan |
| NC Emission Summary-Nonroad | Rec - USE NYSDEC 2007 NONROAD data from the state emission inventory (data on Wigigio) for all categories except small marine. | X | As stated, but includes recreational marine |
| Waste Management | | | |
| NC Waste | This is fugitive CH4 emissions from landfills. There are two required Scopes. Scope 1 - Estimate of actual emissions in regional boundary. (rec) use MMR or Title 5 (annual landfill reporting) data directly for facilities (data on Wigigio). For recently closed landfills or for areas without reported data, use a First Order Decay model to estimate emissions. Scope 3- emissions footprint attributed to current waste generation regardless of where it is treated. (rec) Estimate county level MSW and C/D waste generation and apply a representative FOD model with prevailing CH4 captures rates forward-casted 50 years to estimate the footprint. | X | Actual 2010 treatment emissions reported, allocated to counties in region based on average tonnage per capita |
| Not Reported | Rec - for any MSW incinerated that does not generate grid connected power, compute emissions. MSW CO2 emissions split. 44% shall be reported as Scope 1 as part of non-biogenic (plastics etc), and 56% can be reported as option biogenic based data for 2005 on http://www.eia.gov/cneaf/solar.renewables/page/mswaste/msw_report.html . All Ch4 and N2O shall be reported under required Scope 1 | X | Not reported, no non-grid incinerators reported in DEC data. |
| NC Waste water | Determine population covered by WWTPs. (Rec)- Use the ICLEI Local Government Operations Protocol and apply to all facilities in the region. (Alt) use methods as described in the EPA 2009 Draft GHG guidance to translate populations served into emissions using default data. Determine population covered by Septic Systems, and apply the default emissions / capita as described in the ICLEI Local Government Operations Protocol. | X | Based on conversations with P. Groth and J. Yienger, used State Inventory Tool and regional population, allocated to county by population |
| Agriculture | | | |
| GHG_NC_Agriculture | | X | As stated |
| GHG_NC_Agriculture | (Rec) Methods as described in the EPA 2009 guidance and executed in the EPA's State Inventory Tool. Use locally resolved fertilizer, crop, and livestock population from either the 2007 Ag census or the US NASS system to get county-level data and make calculations for each county. | X | As stated |
| GHG_NC_Agriculture | | X | As stated |
| Not Reported | | X | None reported |
| Land Use and Forestry | | | |
| GHG_NC_Forest | Optional Source and Sink. Use methods described in the EPA 2009 Guidance. Use local forest inventory data, or use the US Forest Services online inventory tool for forests. For carbon stock factors use the National Council for Air and Stream Improvement's Carbon On-Line Estimator. | X | As stated |
| GHG_NC_Forest | (NCASI 2008) | X | Total reported for information, change is not relevant to WG discussions |
| Grand Totals | Sum Totals in columns for all EXCEPT ANY FORESTRY SINKS. Totals in the Scope 1 column can be a considered a physical roll up of emissions that occur in boundary, and is analogous to reporting that is done for state and federal GHG inventories, and for air quality management. | | |
| | Value above MINUS and reported optional forestry sinks. | | |

North Country
QA/QC Roll Up

REDC GHG Emissions Roll Up Report

Year: 2010

(all emissions in Column D, when summed will equal the total County or REDC protocol compliant GHG emissions estimate)

REDC / County Name **QAQC**

Color Code

REDC REQUIRED for the Roll Up Report, though some data may be zero, N/A, or considered to small to count
NO DATA Report NO Data in cell

| DRAFT Roll Up Report CGC. Emissions in MTCDE | | | | | | | |
|--|---------|---------|---------|--------|-----|-----|--------|
| | CO2e | CO2 | CH4 | N2O | PFC | HFC | SF6 |
| Built Environment | | | | | | | |
| Residential Energy Consumption | | | | | | | |
| Electricity / Steam | 325,724 | 324,140 | 218 | 1,366 | - | - | - |
| Natural Gas | 290,410 | 290,125 | 115 | 170 | - | - | - |
| Propane / LPG | 103,286 | 102,880 | 103 | 304 | - | - | - |
| Distillate Fuel Oil (#1, #2, Kerosene) | 432,290 | 430,840 | 367 | 1,084 | - | - | - |
| Wood | 16,477 | - | 5,609 | 10,868 | - | - | - |
| Commercial Energy Consumption | | | | | | | |
| Electricity / Steam | 178,964 | 178,094 | 120 | 751 | - | - | - |
| Natural Gas | 204,913 | 204,712 | 81 | 120 | - | - | - |
| Propane / LPG | 40,396 | 40,237 | 40 | 119 | - | - | - |
| Distillate Fuel Oil (#1, #2, Kerosene) | 395,820 | 394,492 | 336 | 992 | - | - | - |
| Residual Fuel Oil (#4 and #6) | - | - | - | - | - | - | - |
| Coal | 357 | 355 | 1 | 2 | - | - | - |
| Wood | 6,474 | - | 2,204 | 4,270 | - | - | - |
| Industrial Energy Consumption | | | | | | | |
| Electricity / Steam | 269,206 | 267,897 | 180 | 1,129 | - | - | - |
| Natural Gas | 186,750 | 186,567 | 74 | 109 | - | - | - |
| Propane / LPG | 1,701 | 1,695 | 2 | 5 | - | - | - |
| Distillate Fuel Oil (#1, #2, Kerosene) | 1,285 | 1,281 | 1 | 3 | - | - | - |
| Residual Fuel Oil (#4 and #6) | 262,255 | 261,388 | 219 | 647 | - | - | - |
| Coal | - | - | - | - | - | - | - |
| Wood | 1,928 | - | 656 | 1,272 | - | - | - |
| Energy Generation and Supply | | | | | | | |
| Electricity T/D Losses | 45,041 | 44,822 | 30 | 189 | - | - | - |
| Natural Gas T/D Losses | 126,913 | - | 126,913 | - | - | - | - |
| Use of SF6 in the Utility Industry | 10,359 | - | - | - | - | - | 10,359 |
| Industrial Processes | | | | | | | |

REDC GHG Emissions Roll Up Report

Year: 2010

(all emissions in Column D, when summed will equal the total County or REDC protocol compliant GHG emissions estimate)

REDC / County Name: **QAQC**

Color Code

REQUIRED for the Roll Up Report, though some data may be zero, N/A, or considered to small to count
 Report NO Data in cell

| DRAFT Roll Up Report CGC. Emissions in MTCDE | | CO2e | CO2 | CH4 | N2O | PFC | HFC | SF6 |
|--|--|------------------|----------------|---------------|---------------|---------------|---------------|-----|
| Cement Production | Cement Production | - | - | - | - | - | - | - |
| | Iron and Steel Production | - | - | - | - | - | - | - |
| | Ferroalloy Production | - | - | - | - | - | - | - |
| | Aluminum Production | 234,165 | 211,169 | - | - | 22,996 | - | - |
| | Paper and Pulp | 33,205 | - | - | - | - | - | - |
| | Limestone Use | - | - | - | - | - | - | - |
| | Soda Ash Use | - | - | - | - | - | - | - |
| | Semi-Conductor Manufacturing | - | - | - | - | - | - | - |
| | Chemical Manufacturing | - | - | - | - | - | - | - |
| | Product Use (ODS Substitutes) | - | - | - | - | - | - | - |
| | All Refrigerants- except utility SF6 | 99,181 | - | - | - | - | 99,181 | - |
| Transportation Energy | On-road: ALL (Total not ethanol) | - | - | - | - | - | - | - |
| | Motor Gasoline (E-10) | 1,545,164 | 1,539,705 | 4,078 | 1,381 | - | - | - |
| | Diesel | 421,448 | 420,037 | 1,053 | 358 | - | - | - |
| | Ethanol | - | - | - | - | - | - | - |
| | Biodiesel | - | - | - | - | - | - | - |
| | Rail | - | - | - | - | - | - | - |
| | Diesel | 71,649 | 71,409 | 180 | 61 | - | - | - |
| | Electricity Consumption | - | - | - | - | - | - | - |
| | Marine | - | - | - | - | - | - | - |
| | Gasoline | - | - | - | - | - | - | - |
| | Distillate | 28,744 | 28,647 | 72 | 24 | - | - | - |
| | Residual Fuel Oil | 27,070 | 26,981 | 67 | 23 | - | - | - |
| | Off-road Mobile | - | - | - | - | - | - | - |
| | All Fuels (Diesel and Gasoline) | 566,620 | 564,649 | 1,472 | 499 | - | - | - |
| Waste Management | Solid Waste Management | - | - | - | - | - | - | - |
| | Landfill Methane and Combustion | 97,305 | 134 | 97,170 | 0 | - | - | - |
| | MSW incineration (non grid connected) | - | - | - | - | - | - | - |
| | Sewage Treatment | - | - | - | - | - | - | - |
| Central WWTPs and Septic Systems | 40,000 | - | 30,000 | 10,000 | - | - | - | |
| Agriculture | Livestock | - | - | - | - | - | - | - |
| | Enteric Fermentation | 519,547 | - | 519,547 | - | - | - | - |
| | Manure management | 107,207 | - | 88,631 | 18,577 | - | - | - |
| | Crop Production and Soil Management | - | - | - | - | - | - | - |
| | Use of Fertilizer | 31,506 | - | - | 31,506 | - | - | - |
| Crop Residue Incineration | - | - | - | - | - | - | - | |
| Grand Totals | 6,723,362 | 5,592,254 | 879,538 | 85,828 | 22,996 | 99,181 | 10,359 | |

D Implementation Strategies

North Country Sustainability Plan - Implementation Strategies

Energy

Perform a resource and lifecycle assessment to evaluate the quality and quantity of the North Country's biomass resources and determine the capacity for regional biomass expansion and adoption.

Provide and increase training opportunities for local contractors for renewable energy installations.

Facilitate an increase in solar installation using successful models of residential and community-based solar power, including solar thermal.

Promote the use of NYSERDA's ongoing programs to enhance the rate and scale of energy retrofits.

Establish incentives for energy efficiency and green building projects.

Develop guidance for small-scale power economics.

Livable Communities and Land Use

Implement pilot projects for Main Street redevelopment. Use successful outcomes as the basis for future projects.

Provide funding and staffing resources to support the development of local planning, including Hazard Mitigation Plans and Comprehensive Land Use

Establish programs that provide infrastructure and economic resiliency to climate related impacts.

Encourage healthy communities through nutrition awareness and providing healthy local food choices.

Promote educational opportunities and develop knowledge networking to connect schools and enable them to share sustainability projects and programs across the region.

Working Landscapes

Capitalize on existing forest industry infrastructure to make greater use of forestland and underutilized farmland for biomass

development.

Expand availability of local food by encouraging new farmers, while connecting local growers with local markets, including year-round and seasonal residents, schools, institutions, and tourists.

Educate forestland owners on the financial and resource benefits of using the services of professional foresters to manage and develop their resource.

Improve the production capacity of commodity and specialty crops and assist farms with diversification (including agritourism) and new business startups.

Incentivize energy audits, upgrades of farm equipment, and methods to enable farmers to achieve production goals using less energy.

Transportation

Update transportation codes to encourage intra-county bus services. Investigate new ways of increasing transportation or commerce options in North Country.

Expand and complete broadband installations within the region and identify and adopt strategies to reduce transportation demand and improve commerce.

Expand existing public transit services and establish new inter- and intra-county bus routes. Provide better connections from regional passenger rail stations and airports to hamlets and cities.

Develop publically available informational services and educational opportunities including a regional transportation website that links residents and visitors to transportation options and services.

Improve regional coordination of transportation infrastructure and services for residents, visitors and commercial interests.

Improve freight operations and include freight shipping and distribution strategies in county comprehensive plans and local industrial development plans as they are updated.

Water Management

Implement programs to reduce system losses and conserve water supply

Support energy-efficient upgrades and encourage the use of renewable energy sources for water infrastructure

| |
|--|
| Support the development of watershed management plans |
| Reduce pollutant loads and non-point source impacts to water quality |
| Reduce the impacts of invasive species. |
| Evaluate locations where engineering solutions may be needed to mitigate frequent flooding. |
| Identify water management strategies needed to support the growth of businesses, industry, and recreation within the region. |
| |
| Materials Management |
| Conduct regional research on material management contracting and disposal fees to help determine best practices that can be shared regionally to improve local decision-making for material management. |
| Encourage counties and planning units to adopt single-stream or zero-sort recycling. |
| Increase the number of composting and digester facilities to reduce the volume of food and yard waste sent to landfills, and to create a useable product (fertilizers). |
| Explore and promote market opportunities for recyclable and recovered materials. |
| |

E List of Potential Projects

North Country Homegrown Sustainability Plan
 Information on Submitted Project Proposal Forms
 Current as of: Monday, November 19, 2012

| North Country Projects Demonstrating Goals in Alignment with CGC Planning Process | | | | |
|--|---------------------|---------------------------|---|---------------|
| This table includes all projects submitted to the Planning Team. Referenced projects do not receive preferential ratings during the CFA process as a result of their inclusion, however projects which align themselves closely with the goals and objectives set forth in this document will be stronger candidates for certain streams of CFA funding. The projects are not pre-ranked in special order. Although several projects align with more than one focus area working group topic, they were placed in the category to which they were most closely associated. | | | | |
| Project Name | Sub-Category | Contact Person | Project Description | County |
| Programmatic Projects | | | | |
| Online Outcome Tracking System | | Dave Mason and Jim Herman | As an output of the ADK Futures effort, the NCREDC and the NC HomeGrown Sustainability Plan, there will be large numbers of projects and other indicators of progress or lack thereof. We want to build an online system that tracks all of these efforts against the stated desirable outcomes. As projects or other indicators proceed in a positive manner, the objective(s) they support will be highlighted as having favorable expectations of success. Conversely, when there are projects or other indicators that are not succeeding or are moving in the opposite of the desired direction, it will flag the relevant objectives as having unfavorable expectations of success. | All Counties |
| North Country Best Management Practices in Sustainability Database | | Jennifer Perry | Create and maintain a best management practices, web-based database profiling best management practices organized by CGC Plan categories, including education as well. Criteria for inclusion will be based on categories, goals, strategies and indicators identified in the Plan. | All Counties |
| K-20 Sustainability Education/Literacy | | Sue Powers | The project aims to develop a network of sustainability educators and facilities personnel at K-12 public schools and all institutions of higher education to promote sustainability education at all levels through the implementation of projects to improve school/institution sustainability. The focus will be on valuing the environment, and energy, food and materials management systems. The first year project will establish the network, organize 2-3 meetings/workshops to educate teachers, students and facilities personnel, and fund specific projects identified through a region-wide student competition. | All Counties |

Note: Projects are not recorded in any particular order.

North Country Homegrown Sustainability Plan
 Information on Submitted Project Proposal Forms
 Current as of: Monday, November 19, 2012

| Project Name | Sub-Category | Contact Person | Project Description | County |
|--|----------------------|-----------------------------------|--|--------------|
| Energy | | | | |
| ADKCAP (Adirondack Climate and Energy Action Planning) | | Stephanie Ratcliffe and Kara Page | This ongoing education and information sharing initiative has succeeded in raising awareness of climate and energy issues across the region for three years with underserved and nontraditional audiences. Implement 4-6th years of Wild Center - Partners information-sharing project on green solutions for the Adk region and beyond, specializing in green building training workshops, on-line news, frequently updated social media, educational case studies of success, innovative teaching videos of hands-on solutions and regional conversations about climate and energy. Reaching atypical but necessary audiences including contractors, code officers, municipal leaders, teachers, transportation specialists, tourism agencies, community planners, buildings specialists, alternative energy businesses, regional, Northeastern U.S., and international organizations. | All Counties |
| Anaerobic Digestion of Food Wastes in North Elba | Materials Management | Tammy Morgan and Kelly Carter | The project will divert 900 tons of organic material from landfills annually through the process of anaerobic digestion in turn, the project will generate income by producing marketable products, decrease our carbon footprint, provide a sustainable solution to our solid waste issue, create green jobs in the bioenergy field and make Lake Placid a model for other communities | Essex County |
| Energy Conservation for Municipal Facilities | | Garrett Dague | The county would like to implement energy conservation measures recommended from a series of NYSERDA and NY Power Authority audits conducted for all Essex County owned facilities. These including the County Courthouse, Fish Hatchery, DPW Administration building and garage, Community Resources/Transportation building, Mental Health building, Probation building, Nutrition building and County Government Complex. This project will implement the energy conservation measures recommended in the audits, to include energy efficient light fixtures, programmable thermostats, weather stripping of doors & windows, insulation, window replacement, heating system & HVAC upgrades, occupancy sensors and energy star appliances. The County would also like to investigate the feasibility of converting the existing heating systems serving the County Complex, County Jail and DPW facilities to biomass heating systems. The project will contribute to the Energy goals of reducing energy use and increasing building energy efficiency. The biomass feasibility projects if implemented, will contribute to the use of renewable energy. | Essex County |

Note: Projects are not recorded in any particular order.

North Country Homegrown Sustainability Plan
 Information on Submitted Project Proposal Forms
 Current as of: Monday, November 19, 2012

| Project Name | Sub-Category | Contact Person | Project Description | County |
|---|----------------------------|-----------------------------------|---|-----------------|
| Biomass Study | | Village of Tupper Lake | 60 buildings at Sunmount's campus currently run oil with propane fuel as a backup. The proposal would switch the entire campus over to a biomass-fired energy system and create a district beyond Sunmount where the energy would be distributed as well. The nearby L.P. Quinn Elementary school and The Wild Center natural history museum, as well as residents in the area, are listed as those who could potentially be hooked up to the district. | Franklin County |
| Building a Greener Adirondacks (BAGA) | | Stephanie Ratcliffe and Kara Page | Implement 3RD Wild Center - ADKCAP - Partners conference on green building ranging from wastewater treatment to deep retrofits to passive solar design. The event is aimed at contractors, architects, and DIY homeowners. | All Counties |
| CEEM (Community Energy Efficiency Management) | | Stephanie Ratcliff and Kara Page | This ongoing 4-town pilot program is showing successful community-based energy efficiency in action at municipal, residential, and business levels. We will expand in the next phase to work with additional communities and support small municipalities' needs and to engage small business, schools, and residents to implement energy efficiency audits and retrofits through selection of communities. Provide documentation (videos, photos, online sharing to illustrate process, cost savings, and local impressions). | Franklin County |
| Clean Tech Bioenergy Heating Development Project in the North Country | | Dave Dungate | This project will be a model and catalyst for expanding the use of advanced high-efficiency wood pellet boiler systems in commercial and institutional-scale buildings in the North Country. The project will help overcome some of the key barriers to expanded use of biomass including: high capital cost of equipment, insufficient customer base to achieve economies of scale for bulk pellet fuel delivery and lack of trained technical staff to install and provide maintenance on biomass boiler systems. The project will install advanced high-efficiency wood pellet boiler systems at three sites in the Region (public school, recreational facility and college campus). The project will hope to develop and demonstrate a business model that can leverage private sector resources to replicate the boiler system financing model at other sites in the North Country once a core base of projects is established. | All Counties |
| Croghan Dam Restoration Initiative | Water; Livable Communities | Glen Gagnier | We are striving to rehab a dam and to develop the economic potential of the site to provide for the long-term sustainability of the structure through the generation of hydroelectricity. Although the project is intended to focus on the Croghan Dam in Lewis County, it could serve as a model of what can be done with numerous low-head dams throughout the state that have the capacity to provide green energy. | All Counties |

Note: Projects are not recorded in any particular order.

North Country Homegrown Sustainability Plan
Information on Submitted Project Proposal Forms
Current as of: Monday, November 19, 2012

| Project Name | Sub-Category | Contact Person | Project Description | County |
|--|----------------------|----------------------------|--|-----------------------------|
| Cultivating Shrub Willow for Energy | Working Landscapes | ReEnergy Holdings, LLC | The U.S. Department of Agriculture (USDA) is investing \$4.3 million to encourage the growth of shrub willow as a renewable energy fuel in Central and Northern New York. Critical to the project is a collaboration between ReEnergy and the SUNY College of Environmental Science and Forestry (ESF) in Syracuse, which will offer an outreach program to educate~ local government officials, agricultural leaders, farmers and landowners about the opportunity to grow willow. | All Counties |
| Demonstration Site For the Use of Electric Maintenance and Farm Vehicles | | North Country School, Inc. | This proposal is designed to provide a community demonstration site for the use of electric vehicles for agriculture and facilities maintenance. | Lake Placid, Essex County |
| Energy Efficiency=Economic Development | | Ann Heidenreich | This project will study the impact of implementing household energy efficiency improvements on economic development. The study will compare the benefits of investing economic development dollars in weatherization vs recruitment of manufacturing plants and will show the relative effects of the two development strategies on economic development in the North Country region. The 2007 study showed significantly greater benefits from investments in weatherization. The project aims to provide data that will assist those who are drafting and selecting energy projects and encourage an increase in the number of economic development projects targeting residential energy efficiency improvements. | All Counties |
| Food-to-Methane Project | Materials Management | North Country School, Inc. | A staggering amount of landfill waste is food scraps from individuals, and organizations, and businesses. Our goal is to partner with the Lake Placid School District, and several area businesses to provide a demonstration project where food scraps get converted to methane gas and used for electric generation. Food scraps would be processed on the North Country School campus, the electricity generated fed into the electric grid, and the leftover digestate used on our working farm as a soil amendment. | Lake Placid, Essex Counties |
| HP Hood Biomass Feasibility Study | | Dave Zembiac | With assistance from the USDA Forest Service, the HP Hood plant in LaFargeville (produces cottage cheese & sour cream) is examining the feasibility of using biomass to replace its reliance on fuel oil. Assuming a the project is feasible and offers an attractive return on investment for the company, and that the company decides to move forward, further study could look at the feasibility of providing heat to the neighboring town highway facilities and bus garage as well as the manufacturing plant. | Jefferson County |

Note: Projects are not recorded in any particular order.

North Country Homegrown Sustainability Plan
Information on Submitted Project Proposal Forms
Current as of: Monday, November 19, 2012

| Project Name | Sub-Category | Contact Person | Project Description | County |
|---|---------------------|-----------------------------------|--|---------------------|
| Keene Central School Fuel Switching Project | | David Mason | I have submitted a CFA this past summer to fund a feasibility study for and integrated biomass and solar (PV and thermal) fuel switching project. As proposed, it would be designed to make the system and it's performance visible to students with enough instrumentation that they would use it for class instruction and experiments. If these technologies take hold in the area, we need to attract interested young people to enter training programs and work in the field. | Keene, Essex County |
| Keene Community Solar Project | | David Mason and James Herman | Virtual Net Metering is likely to become law in New York, hopefully by the end of this year. The Keene Solar Project aims to build an engineered field of panels on top of the long-closed landfill, now a transfer station. | Essex County |
| Lewis County Community Digester | Working Landscapes | Eric Virkler and Jennifer Harvill | The Lewis County digester would be centrally located to collect manure from multiple farms in a small radius of the facility. Energy production would hopefully be used at a local manufacturing operation. The digester would be located close enough to the energy user to pipe the gas produced directly to the customer. Electricity would be produced at the customer site and the heat would also potentially be used at the site. The solid by product of digestion would be available for farms or other customers and the liquid by product would go back to the farms for spreading on fields. | Lewis County |
| Low Temperature Electric Generation | | North Country School, Inc. | High efficiency thermal biomass systems are becoming more popular in the North Country. While these systems are highly efficient during the coldest parts of the winter, during the shoulder seasons, buildings often don't put enough demand on these boilers to keep them running at peak efficiency. Installing a low temperature, closed Rankine cycle engine on our 1.4 MMBtu/hour ACT high efficiency chip/pellet boiler will allow our boiler to operate more efficiently during the entire heating season while producing a significant amount of grid-tied electricity. This project would serve as a demonstration site for others in the North Country who are interested in increasing the efficiency of their wood boilers. | Essex County |
| Micro-Hydro Power for North Country | | Andy Wekin | We have started to develop a micro-hydro system that would be inexpensive, relatively easy to install and maintain, and would provide enough electricity for an average household. We have researched two case studies and have conducted two field trials. With the data collected, we are confident that a feasible system could be designed and developed that would have a base cost of under \$1000 (not including installation) and would be able to pay for itself in as little as 2 years. Our goal is to manufacture these systems locally and install them throughout the North Country. | Essex County |

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| Project Name | Sub-Category | Contact Person | Project Description | County |
|--|---------------------|-----------------------|---|---------------------|
| Model Neighborhood Project | | Joe Short | The Model Neighborhood Project (MNP) is subsidizing the purchase and installation of high efficiency, fully automated pellet boilers in homes, affordable housing units and municipal buildings in pilot communities to demonstrate the efficiency, cost-savings and ease of use of these systems. | All Counties |
| Natural Gas Distribution Lines Analysis to Identify Potential Communities for Biomass Conversion | | Katie Malinowski | The use of wood for thermal heating has a large emphasis in the North Country. However, in communities where natural gas lines are located wood does not compete economically. By doing a GIS analysis of what communities have access to natural gas, it would highlight those that don't have natural gas and would help hone efforts to implement projects to convert individual homes or create district heating opportunities. | All Counties |
| Net-Zero Building For Palliative Care Office | | Robin McClellan | Hospice and Palliative Care of St. Lawrence Valley has recently purchased a small home adjacent to their main office to house the offices of the Palliative Care Division. The house is unremarkable but students in SUNY Canton's Alternative and Renewable Energy program are developing a plan to do a "deep energy retrofit" on the building and make it energy self-reliant—net-zero—by well insulating it, using geothermal heating and the appropriate quantity of PV panels. We believe this would be the first net-zero professional building in the North Country. | St. Lawrence County |
| Net-Zero Stockholm Town Offices | | Robin McClellan | This project is for a new net-zero Town Hall for the Town of Stockholm. A group of SUNY Canton students in the Alternative Energy Design course is preparing a basic design for the building and is doing the analysis to determine what is needed to achieve net-zero. The building will be well insulated, take advantage of passive solar gain and be equipped with sufficient PV to produce all the power used by the building over the year. We chose net-zero as the standard we wish to achieve over LEED certification because it is simple to gauge success: the meter tells all. That said, we will consider LEED criteria that make sense in a rural area. | St. Lawrence County |
| Promote the Installation of On-Farm Digesters in the North Country | Working Landscapes | Jennifer Harvill | Look for opportunities to install on farm digesters to reduce energy consumption and cost and promote economic development opportunities for the farmer. | All Counties |

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|---|--|-----------------------|---|---|
| ReEnergy Chateaugay | | Tom Beck | ReEnergy Chateaugay is a 20-megawatt biomass-to-energy facility, currently idled for economic reasons. When operational, it uses locally sourced sustainably harvested forest residue biomass as its primary fuel to produce approximately 130,000 MWh of electricity per year -- enough to supply nearly 17,000 homes. When operational, the facility employs 18 full-time well-paid workers and sustains approximately 100 other jobs in the region. | Clinton and Franklin Counties |
| Regional Digester to Process Manure and Food Waste for Energy and Soil Amendments | Working Landscapes; Materials Management | Robin McClellan | A regional digester would accept a variety of organic materials for digestion including manure, whey, food waste from institutional kitchens and restaurants, etc.. The end products would be biogas to run an electrical generator, organic solids that would be used as soil amendments and wastewater with a reduced nutrient value that could be spread on fields in greater volumes because of the lower nutrient value. There will also be waste heat from the generator and a use could be found for that. | Franklin, Essex and St. Lawrence Counties |
| Rehabilitation/Replacement Study for St. Regis Falls Dam | Livable Communities; Water | Matt Foley | The timber crib dam in St. Regis Falls was constructed in 1947 by the local volunteer fire department to have water available to fight fires. In the fall of 2012 the Federal Energy Regulatory Commission expressed concern for the deteriorating condition of the dam. An analysis was made of the dam by P.E. John Carr, NYDEC Regional Dam Safety Engineer Dominic Fontana, and FERC representatives Jerry Cross and Eugene Gall who determined that within the next year substantial repairs must be made or a plan and schedule prepared for complete replacement. Azure has asked an engineer to prepare estimates for replacement of the dam with a permanent concrete structure. | Franklin County |
| Residential Rehabilitation, Energy Conservation and Weatherization Project | Livable Communities | John K. Bartow, Jr. | The project is aimed at providing resources to address residential emissions of greenhouse gases from residential homes (single and multi-family) – the second largest leading source of greenhouse gas emissions in the North Country. The project makes funding available for the upgrading or replacement of thermal heating units as well as energy conservation and weatherization improvements that reduce overall energy use. | All Counties |

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| Rivermede Solar Thermal | Working Landscapes | Dan Mason | Currently, Rivermede Farm has greenhouses running 8 months of the year with supplemental heat provided by electricity, propane or fuel oil. This proposal reflects a new, transformational, approach in the north country that utilizes solar thermal, and raised beds, to gain a 12 month/year operation. The Rivermede Farm Solar Thermal Greenhouse Project has 4 elements: 1) change 4 operating greenhouses from oil fired heat and that are currently operated 8 months out of the year to Solar Thermal greenhouses operated 12 months out of the year, 2) develop and use performance metrics to assist other farms in making similar decisions, 3) share lessons learned from project experience and performance metrics with Adirondack Harvest and 2013 North Country Clean Energy Conference. The project is expected to remove 1800 gallons of fuel oil, or 46,800 lbs of CO2, from the environment, move 3 seasonal positions (currently) to 2 full time positions post project completion and is a cooperative effort between Rivermede Farm and Public funding | Essex County |
| Unlocking Barriers to Community Economic Development through Energy Conservation | | Curt Gervich | This project proposes to create an "Assistance Center for Local Energy Conservation Research and Implementation" that will provide municipal electric utilities and local governments with assistance reducing energy use in their localities and integrating energy planning into economic development plans. | Clinton, Essex, Franklin, Jefferson and St. Lawrence Counties |
| Woody Biomass Learning Center | Working Landscapes | North Country School, Inc. | There is broad interest in the use of woody biomass to produce thermal energy for heating buildings in the North Country. However, transitioning to a solid fuel like woody biomass poses significant challenges for homeowners, schools, municipalities and other institutions. In addition, as has been seen in a variety of communities, harvest techniques often degrade natural resources. If the use of woody biomass is to be a sustainable fuel for the North Country then better techniques need to be developed to reduce or eliminate the potential for natural resources degradation. | Essex County |

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|---|--------------------|------------------|---|------------------------------|
| Livable Communities | | | | |
| Cure Cottages & Saranac Lake Revitalization - the Development of a New "Old" Tourism Industry | | Sandra Hildreth | Saranac Lake has a rich history that combines health, recreation, and the arts. The Village has hundreds of identified historic "cure cottages" - most of which are private homes and apartments and are in poor condition. The Village could become much more of a tourist destination for cultural history fans if 1) the "cure cottages" could be renovated and restored and made energy efficient; 2) some could be converted into bed & breakfasts; others open for tours; 3) the whole concept of coming to the Adirondacks for health & wellness could be promoted and combined with eco-tourism, locally grown foods and our abundant outdoor recreational activities; 4) this could provide jobs in architectural design and restoration; construction; energy efficiency; hospitality; tour guides; outdoor recreation guides; etc, 5) this would bring business to existing lodging and dining businesses and encourage the development of new ones. | Franklin County |
| Grow Local, Buy Local | Working Landscapes | Amanda Root | CCEJC's Grow Local Buy Local initiative will increase producers' revenues and build local infrastructure by increasing direct marketing opportunities for local products in Jefferson and Lewis Counties, a designated food desert area, and will increase access to healthy foods in the food desert. The project will provide training, education, networking, and technical assistance. | Jefferson and Lewis Counties |
| Indian Lake Main Street Revitalization | | Brenda Valentine | The 2011 Indian Lake Strategic Plan identified the abandonment of retail and housing along Main Street and the condition of buildings as a serious concern. This project is to subsidize the repair of facades along Main Street, preserve, revitalize and retain the mix of commercial and residential structures | Indian Lake, Hamilton County |
| Indian Lake Outpost | | Brenda Valentine | We propose to construct a retail development that can house a variety of fresh food providers. Since the local market closed three years ago there is an ongoing need/ vision for a variety of fresh, affordable food that is available in our community for year round residents as well as seasonal residents and visitors. By having a food market stall and other related retail storefronts, we can provide fresh food year round and attract tourists with a unique venue. | Hamilton County |
| Indian Lake Waterfront Development | | Sally Stanton | Indian Lake would like to revitalize the waterfront that frames the entrance/exit to the Town along Rt 28/30 with an accessible, esthetically pleasing waterfront that encourages people to stop as they drive through the Adirondacks. | Hamilton County |

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| Little Ausable River Trail, Phase I | Working Landscapes | Adele Douglas | The Town of Peru is working to link its four parks, the School, Post Office and hamlet area with a trail system. This project is listed in the Town's Comprehensive Plan, which encourages development in the hamlet and the protection of agricultural lands. The Little Ausable River Trail, Phase 1, is the first major section of the overall trail project. This park is a treasure, it's in the center of Town, it's a beautiful site and has a very interesting yet similar history to many other North Country towns. In the winter the non-motorized trail will be open for cross country skiing. Along the trail route additional interpretive signs are planned, one on river ecology and one on the Ausable Branch of the D&H railroad. The work on the trail within Heyworth/Mason Park, the trailhead park, was completed this year, work on the construction of the trail as it leaves from the back of the park is planned for 2013. | Clinton County |
| Local Venture Center | | Chelle Lindahl | The Local Venture Center is to be located in the heart of the St. Lawrence River Valley between Potsdam and Canton, NY. To be housed on the farm site of the Homestead Learning Community (or HLC, with a core curriculum of agriculture, energy, forestry, building, and rural skills), the Center will house small-scale food processors and other curriculum-relevant small business incubation services and facilities. Facilities to include move-in ready office space, partition-able light manufacturing and/or storage space, and shipping depot - providing a business address and one-stop services for small business start-ups relevant to the core interests of the HLC. Potential for retail and office space is high, as are amenities for tourism and a strong community education component, along the corridor of a hoped-for expansion of the Scenic Byways program. The project has strong ties with many regional services that will be partnered into the project, rather than duplicate services. | St. Lawrence County |

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| Lyons Falls Mill Site Redevelopment Project | Energy | Eric Virkler | The Lyons Falls Pulp and Paper Mill site is a 9.4 acre Brownfield site located in Lyons Falls, NY. The redevelopment vision for this site is to create a mixed-use site integrating three related activities: -A wood fiber based bioproducts technology launch pad. Bioenergy production at this site will allow for the commercialization of multiple bio-products creating the potential for additional businesses to develop in the surrounding area. -Facilitating the expansion of an existing hydroelectric facility owned by Northbrook Lyons Falls, LLC. -A Controlled Environmental Agriculture/ Combined Heat and Power (CEA-CHP) facility. | Lewis County |
| Staying Connected Initiative | Working Landscapes | The Wildlife Conservation Society | In 2009 WCS became a key partner in the Staying Connected Initiative, a four-state, 21 partner collaboration. The goal of the Staying Connected Initiative is to conserve, maintain and enhance the priority habitat linkages in the Northern Appalachian/Acadian Ecoregion (see Map) to ensure landscape scale connectivity across the region from the western edge of the Tug Hill Plateau in New York through Vermont, New Hampshire and Maine and on to Quebec's Gaspé Peninsula and into Nova Scotia. SCI partners achieve this goal using three strategies: land protection, transportation barrier mitigation, and land use planning. | All Counties |
| The Tahawus Project(TLC) for Learning, Culture and Community | | Craig Brashear | The repurposing, renovation, and revitalization of a 100-year old building, now called the Tahawus Center, into a hub of culture, creativity, and learning on Main Street, Au Sable Forks. It will benefit the neighborhood and the region. The Center offers varied education and community activities for adults and youth, including art exhibits, dance, science labs, and more. The Center employs both local and guest instructors and artists in its mission to strengthen community through exposure to and access to the arts. | Essex County |
| The Valley Kitchen | | Heather Morgan | To establish a community space within the Au Sable Valley that provides three specific functions: a certified community kitchen, a retail space, and a gathering space. | Essex County |

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| West Eden Community Development | | Donald Merrick | West Eden will be a development of 20 homes. These homes will be built by a local contractor and will employ only local workers in the construction. Should someone be needed with a particular skill (installation of gas lines) an attempt will be made to hire locally. If there is no one locally, a subcontractor can be hired with the stipulation that any laborers needed must come from this area. (Creation of 8-9 jobs for at least 3 years.) We will also be using local products as much as possible. | Franklin County |
| Materials Management | | | | |
| Continuous Flow Drum Composter | Energy | North Country School, Inc. | Large volumes of food wastes from institutions such as schools, hospitals, prisons, restaurants, etc. end up in landfills. Once covered, these food wastes are decomposed by anerobic bacterial, producing significant amounts of methane. In addition, due to the density of many of these food wastes there is a substantial carbon footprint associated with their transportation. We propose to construct a continuous flow, rotating drum composter capable of accepting 150 pound of compost per day. The design will be scalable, capable of handling much larger volumes of food scraps. The carbon bulking agent will be wood chips, obtained from our sustainable forestry operation. We intend this to be a demonstration project for decision makers at other organizations and institutions. | Essex County |
| Transportation | | | | |
| Adirondack Teleworks | Livable Communities | Bill Murray | The AT Project focus is bringing teleworking jobs to the Adidondack Park. These are green jobs with an almost zero carbon footprint. Since the majority of driving most people due is job related teleworking jobs will greatly reduce the amount of travel done by most residents. | Hamilton County |
| Water | | | | |
| Alternative to Sewage Sludge Disposal | Energy | Michael J. Sligar | Alternative to Sewage Sludge Disposal through elimination of incineration, upgrading anaerobic sludge digestion, incorporation of land application of biosolids, and the installation of alternative electricity production (micro turbine technology). The project will include energy generation for plant operation, a reduction in fuel oil used to ship sludge off site, reduction in the volume of landfill-disposed wastes, and the creation of fertilizers for use in land application. | Jefferson County |

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|--|----------------|-------------------|---|--------------------------------------|
| Community and Aquatic Ecosystem Resilience to Climate Change | Transportation | Connie Prickett | <p>The Champlain Valley suffered widespread damage due to extensive spring flooding and Tropical Storm Irene in 2011. There was extensive and costly damage to private property and to transportation infrastructure, including culverts and roads, across the northeastern U.S. Locally, the Ausable watershed experienced severe impacts, with many roads destroyed and millions of dollars of damage to public and private property. Following the storm, awareness of economic and safety issues associated with stream crossings and an opportunity to build on current work focused on the ecological value of culverts developed. Outreach efforts to local highway departments in the watershed led to understanding about their culvert priorities: which culverts are the sites of frequent flooding, which culverts require ongoing maintenance, which culverts are likely to fail in future storms, and what are the obstacles to upgrading these culverts. As a result, the partner organizations (The Nature Conservancy, Ausable River Association, SUNY Plattsburgh, United States Fish & Wildlife Service) have identified a select set of culverts that are ecological and community priorities for upgrade or replacement. “problem” culverts have the greatest potential to block the movement of stream dependent organisms, cannot withstand high water volumes and floating debris, and present frequent maintenance problems for local towns.</p> | Clinton, Essex and Franklin Counties |
| Installation of a Disinfection Facility at the Pollution Control Plant | | Michael J. Sligar | <p>The City owns and operates a 16.0 MGD Pollution Control Plant (wastewater treatment facility). Its effluent discharges into the Black River, a Class C Stream. Until now, it never was required to disinfect its effluent. The NYSDEC has imposed upon the City the requirement to disinfect and the City is in the design phase for its \$6,100,000 hypochlorite disinfection and dechlorination facility. The Black River at the City is a white water recreational river for rafting and kayaking. Seasonal salmon migrations from Lake Ontario, entering Black River Bay at Dexter and proceeding upstream as far as Watertown (as well as a variety of freshwater fishing) is also a popular attraction. As such, the Black River in the Watertown area is a significant component of a tourism marketing package for our area in the northeastern region of the United States. The disinfection and dechlorination facility will enhance this reach of the Black River at Watertown, significantly improving its recreational attributes.</p> | Jefferson County |

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| Living Machine Demonstration Project | | North Country School, Inc. | We propose to incorporate a “living machine” into our wastewater treatment process for the purpose of demonstrating an alternate methodology to traditional wastewater treatment. The living machine would be designed to treat a small percentage of our wastewater stream, during the summer months, in a series of aerobic bioreactors. The bioreactors would be housed within a greenhouse with enough space to accommodate individuals interested in learning about the system. | Essex County |
| Progressive Water Treatment | | | In the Town of Willsboro, a constructed wetland system was installed to reduce phosphorus loading from treated effluent being discharged into the Boquet River, a tributary of Lake Champlain. Through a series of treatment cells, the wetland system provides additional solids removal and phosphorus reduction using wollastonite tailings. The effluent is then directed to one of two catch basins prior to being discharged to the river. This project illustrates an alternative to conventional plant upgrades driven by regulatory changes and can be used as an example for other wastewater treatment facilities. | Clinton County |
| Solar PV at St. Armand Wastewater Treatment Facility | Energy | Garrett Dague | The St. Armand WWTF has experienced various equipment failures and plant deficiencies, resulting in consent orders and demands for mandated upgrades from NYS DEC and DOH. In an effort to develop a cost effective, sustainable and affordable improvement project, special consideration was given to energy efficiency in the proposed design for plant upgrades. The facility requires an upgrade to 3-phase electrical power, however a preferred alternative is the installation of three 20,000 watt photo-voltaic systems. It is estimated that the photo-voltaic system will not cover the total power requirement, and will necessitate the use of some grid power from the utility company. The break-even point for the cost of solar panels vs. the cost of 3-phase power is estimated at 11.4 years. By the end of a typical 20 year solar panel warranty period, the Town will save over \$165,000. By the end of a typical 30-35 year useful life, \$350,000-\$450,000 could be saved, enough to pay for new panels and make operations affordable. This project will reduce the amount of energy pulled from the grid to run the plant, thereby reducing annual operating costs and reducing the plant’s carbon footprint. The treatment plant site contains open space and direct sun exposure in all directions which makes it uniquely suited for solar power. This project could be expanded in the future with additional solar panels, potentially to provide electricity to other nearby buildings. | Essex County |

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| Installation of PH Control Facility | | Michael J. Sligar | Installation of a pH control facility at the chemical dosing station of the drinking water coagulation basin and the rehabilitation of the down stream face of the coagulation basin dam. | Jefferson County |
| Working Landscapes | | | | |
| Adirondack Harvest | Livable Communities | Laurie Davis | Adirondack Harvest operates as a non-profit program of Cornell Cooperative Extension Association of Essex County, NY. It is the largest local food initiative and brand of the Adirondack region, covering 13 counties. Our mission envisions a picturesque and productive working landscape connecting local farmers to their communities and regional markets. Our goals are to increase opportunities for profitable production and sale of high quality food and agricultural products and to expand consumer choices for locally produced healthy food. | All Counties |
| Black River Blueway Trail/Scenic Byway | Livable Communities | Katie Malinowski | The Black River Trail/Maple Tradition Scenic Byways and the Black River Blueway Trail have adopted management plans that identify several implementation items. The overall goals for the Scenic Byways is to promote tourism while preserving the Byway's natural, historical, cultural and recreational resources and maintaining the route's distinctive qualities and character. The complementary Blueway Trail seeks to promote the Black River as a regional asset for tourism, recreation, and community development. | Jefferson, Lewis and St. Lawrence |

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| Gaines Marina | Water; Materials Management; and Transportation | Joe and Naomi Treadwell | New York State does not currently have a Clean Marina Program, however, Vermont, our co-steward of Lake Champlain does. The establishment of this type of facility in the region would be an important improvement in marina infrastructure and would increase the area's appeal for Canadian boaters. Currently a large portion of the economic benefit of Canadian boat traffic is lost to Vermont due to perception that the tourism infrastructure is superior on the eastern shore of the lake. Gaines Marina proposes to investigate Vermont's Clean Marina program and develop a plan to become a prototype "Green Marina" for the North Country region and the entire state. Part of this effort would involve the construction of an indoor, heated boat storage building, which would allow winter storage of boats, thereby eliminating the need for the extensive plastic shrinkwrapping currently used. Gaines Marina would use this facility to repair and restore boats, extending the seasonal marina economy and generating additional full time jobs for the community. The Green Marina Program would also promote good stewardship of the Lake and preservation of water quality as well as energy conservation. | Clinton County |
| Conduct a Woodshed Analysis on Regional Basis | Energy | Katie Malinowski | With demand for wood evolving and changing as hardwood lumber, softwood lumber, pulp, and biomass markets change, there is a need for a planning tool that provides up-to-date information on stock, growth rates, harvest rates, and business demands so that potential new markets can determine if there is a sustainable supply for wood within certain radii. | All Counties |
| The New Farmer Institute | | North Country School, Inc. | Our intent is to expand and improve upon the farm intern program that we have been running for over ten years. The purpose would be to provide experiential learning opportunities for people interested in learning how to start and run a diversified farm for profit. Training opportunities would be open to a wide audience but because we operate the highest elevation farm in the state of New York the experience would be especially useful to high latitude, high altitude locations such as found in our seven county North Country region. | Lake Placid |
| Tug Hill Recreation Portal | Livable Communities | Katie Malinowski | The Tug Hill Recreation Guide is out of print and its on-line version is dated. This project would revamp the online version, offering updated, GPS'd maps with downloadable coordinates, interactive map, etc. modeled after the Adirondack Recreation Portal recently funded by the NCREDC. A print version would be available as well. | Jefferson and Lewis Counties |

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| Whallonsburg Grange Community Kitchen | Livable Communities | Jori Wekin | The Grange Community Kitchen is currently a certified commercial kitchen with basic facilities. Our goals are to increase the capabilities of the Kitchen by adding equipment (to enhance processing – steam kettle, dehydrators, blast freezer, convection oven, vacuum packer), classes and space for community use, and promoting the facility as an incubator for small businesses and value-added processing for local farms. | Essex County |
| USDA Shrub Willow Project | Energy | ReEnergy Holdings, LLC | The U.S. Department of Agriculture (USDA) is investing \$4.3 million to encourage the growth of shrub willow as a renewable energy fuel in Central and Northern New York. Critical to the project is a collaboration between ReEnergy and the SUNY College of Environmental Science and Forestry (ESF) in Syracuse, which will offer an outreach program to educate~ local government officials, agricultural leaders, farmers and landowners about the opportunity to grow willow. | All Counties |
| Adirondack Regional Invasive Species Initiatives | Water | Hilary Smith | The Adirondack Regional Invasive Species Initiatives will protect natural and agricultural resources, communities, and local economies by advancing key projects to prevent and manage invasive species. Several projects are underway and in need of funding to expand their scope, and several projects are in their infancy and require start-up support. The work builds upon current efforts underway by more than 30 partners in the region through the Adirondack Park Invasive Plant Program to develop shared solutions to protect the region from the negative impacts of non-native invasive species.All Counties | All Counties |

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F Stakeholder Engagement Process

North Country Home Grown Sustainability Plan Public Consultation and Stakeholder Engagement Process

NYSERDA Cleaner Greener Communities

Deliverable under NYSERDA Task 5

I. NYSERDA/Management team/consultant interaction

The CGC Grant Program project was formally launched on April 2, 2012 in Lake Placid, Essex County, with a project kick-off meeting involving New York State Research and Development Authority (NYSERDA), the Adirondack North Country Association (ANCA), Ecology and Environment (E&E), TRC, and members of the newly formed Consortium. At this time, the planning team was defined as ANCA (Kate Fish as Principle, and Jennifer Perry as Stakeholder Outreach Coordinator) and E&E (Chris Rohner as Project Coordinator and Nicole Parganos as Project Assistant). The consortium consisted of at least 1-2 representatives from each county—typically from the County Planning Offices (see Appendix I-A, I-B, and I-C). The purpose of the meeting was to fully introduce the plan to members, gather important feedback from the Consortium and to provide a venue for an open discussion among the Consortium and the Project Team to set the course for the North Country Sustainability Plan. Additionally, priorities, opportunities and potential barriers were outlined for each county. This meeting set the tone for the entire project, and generated the brand, *North Country Homegrown Sustainability Plan*. The tone and content of the meeting was established as a result of one on one conversations conducted between the planning team and consortium members.

Since the contract was finalized between Essex County and NYSERDA, ANCA and E & E have participated in biweekly conference calls with Ross Woodson from TRC, and on bimonthly calls (when scheduled) with NYSERDA. In addition, ANCA and E & E are in near daily communication both by phone and via email, as each phase of the project is planned, implemented and completed. E & E and ANCA are managing a highly coordinated and collaborative effort, with each organization giving input into the other's draft materials and outreach actions. E & E & ANCA staff have organized, managed, coordinated and participated in all the working group meetings both on conference calls and in-person meetings. The Consortium receives regular updates about the project, and has direct contact with E & E and ANCA staff as needed. The Consortium reviews all final drafts before submission to Essex County and to NYSERDA and is asked for their input at all critical junctures in the planning process. Consortium members have been active and many made introductory remarks at the public outreach meetings in their respective counties. Most attended the all-working group meeting on October 3 in St. Lawrence County.

ANCA has regular contact with the Regional Economic Development Council (REDC) and keeps them updated on plan processes and deliverables. This strong connection ensures that input from the REDC is reflected in the planning process.

The following support materials are included in Appendix I:

- I-A-Consortium List
- I-B-Planning Team List
- I-C-Consortium invitation letter template

II. Focus Area Working Group Selection:

The Cleaner Greener Communities Focus Area Working Group selection was based primarily on ensuring representation on each of the working groups from the seven county base. The second consideration was to include a broad range of representative interests including not for profits, private business owners, state and regional governmental officials, public service operators and academics. Great attention and care were taken to ensure that key players and subject matter champions were included. A number of individuals who fit these criteria were identified by the consortium and the planning team. Other members were sought based on ANCA’s knowledge of previously active regional participants. In addition, ANCA worked to ensure that groups and individuals who have not been involved in these types of efforts in the past were included. An invitation letter was sent to all potential working group members, a total of over 200 individuals (see Appendix II-A). Most people agreed to participate, and additional members were recommended by those invited. This resulted in a working group base of approximately 220 people (see Appendix II-B).

The following support material is included in Appendix II:

- II-A-Invitation letter
- II-B-Working Group spreadsheet

III. Working group meeting schedule/format

Working groups each met several times throughout the planning process. This meeting schedule was based on feedback provided by the Consortium. Both in-person meetings, as well as conference and individual calls were made to connect with groups.

Round One Meetings

| Date | Working Group | Attendance |
|-----------------------|------------------------------|------------|
| June 13 th | Energy | 23 |
| June 29 th | Working Landscapes | 16 |
| June 29 th | Land Use/Livable Communities | 11 |

| | | |
|----------------------|----------------------|----|
| July 2 nd | Economic Development | 18 |
| July 2 nd | Materials Management | 9 |
| July 3 rd | Water Management | 12 |
| July 3 rd | Transportation | 13 |

In the interest of limiting vehicle miles traveled, and in consideration of the broad geographic range of the North Country Region, it was decided to conduct the first set of meetings via a series of 90 minute conference calls (see Appendix III-A for agenda). A total of 102 working group members were in attendance. During the call, E&E provided a general overview of the scope of the project, including a time line for expected working group involvement. The format of the first face to face meetings was discussed, including a request to identify a draft set of goals, opportunities and constraints for each working group in advance of the meeting. The primary goal of the conference call was to be informational in content, however at this time, participants agreed to merge the Waste and Water Treatment groups given apparent overlap in interests and stakeholder roles. A summary of the call, along with the first draft of goals and indicators as suggested by E&E was sent to working group members as a Working Group Report (see Appendix III-B). These reports were to serve as the format for incorporating working group feedback throughout the planning process. They ultimately served as the rough draft for the Plan. Members were encouraged to review these reports and to provide detailed feedback to E&E relative to their content.

Round Two Meetings

| Date | Working Group | Attendance |
|-----------------------|------------------------------|------------|
| June 21 st | Energy | 38 |
| July 11 th | Working Landscapes | 15 |
| July 11 th | Land Use/Livable Communities | 11 |
| July 12 th | Economic Development | 3 |
| July 12 th | Materials Management | 9 |
| July 16 th | Water Management | 7 |
| July 16 th | Transportation | 12 |

Round two meetings were held at the Wild Center in Tupper Lake, and at the Clean Energy Conference in Lake Placid. A total of 95 working group members were in attendance. E&E began the meeting with a brainstorming session listing opportunities and constraints relative to each working group topic. This was followed by review of the draft sets of goals and baseline indicators as compiled by E&E, in consultation with working group members previous to the meeting. Comments were recorded allowing E&E to incorporate feedback into the Working Group Report (see Appendix III-B).

Nearly every group expressed a desire to craft a Plan that was resilient and adaptable. A second universal theme recognized how intrinsically dependent the North Country economy is upon the protection of its natural capital. It was agreed that North Country natural capital benefits the region in a vast number of ways including drawing visitors to pristine landscapes, wind capacity for wind

farms and rivers that generate hydroelectricity that allow the region to be a net-exporter of electricity, forests with the potential to meet the biomass needs of the region and beyond, ground and surface water that remains largely uncontaminated, and large tracts of agricultural lands in the region’s fertile valleys. .

Round Three Meetings

| | | |
|-------------------------|------------------------------|----|
| August 21 st | Energy | 22 |
| August 21 st | Working Landscapes | 12 |
| August 22 nd | Land Use/Livable Communities | 10 |
| August 22 nd | Economic Development | 5 |
| August 22 nd | Materials Management | 13 |
| August 23 rd | Water Management | 12 |
| August 23 rd | Transportation | 11 |

The third series of working group meetings were conducted during a 90-minute conference call format and were intended to finalize the goals, develop framing statements, and work toward the finalization of the baseline indicators. 85 members were in attendance. The working group report (see Appendix III-B) and draft set of baseline indicators were used as the guiding documents for this discussion. Suggestions made during these conversations were incorporated into the working group report, again intended for use as an outline for the final Plan. Working group members were also asked to begin to identify points of potential collaboration, synergy and overlap in preparation for the upcoming all working group meeting. They were also asked to begin to identify potential projects for inclusion in the Plan.

Round Four Meeting (All Working Groups)

On October 3rd, the fourth meeting convened all working group and some consortium members in a collaborative effort at St. Lawrence University. 100 members were in attendance, including several students from local educational institutions. In an effort to address the working groups’ collective desire to draft a resilient Plan, the Planning Team, in consultation with the Consortium, convened an all working group meeting with the intent of identifying areas of potential overlap, synergy and complement between all working group categories. Additionally, it was intended to provide an opportunity for collaboration between a wide range of regional interests, who might not otherwise have an opportunity for interaction.

The meeting started with a plenary session introducing preliminary GHG inventory data, as well as presenting a progress report on the planning process to date. Subsequently, attendees met in their respective groups for an overview provided by subject matter experts from E & E and working group chairs. In order to achieve the complicated task of identifying synergy between 6 distinct working group categories, a round robin approach was developed by the Planning Team. To

accomplish this, each group moved from table to table visiting each of the remaining working group stations. They spent 30 minutes each at each station. While at the stations, their goal was to identify overlap between their own group and the working group station they were visiting (see Appendix III-C). All thoughts were recorded graphically on a sheet of paper by a moderator who was coached by the Planning Team prior to the start of the meeting. Each group also identified projects which were believed to be in alignment with Plan goals, were reproducible, would create jobs and would reduce greenhouse gas emissions. At the end of the day, groups convened according to County to discuss and identify county-specific projects that would be eligible for the implementation phase of the planning process (see Appendix III-D). In general the meeting was viewed to be a major success and included the deepening of collaborative relationships across the region. E&E and ANCA conducted several phone conversations to follow-up from this meeting. During these conversations, additional data was gleaned and recorded relative to specific projects, and data source recommendations for inclusion in the baseline indicators section.

Greenhouse Gas Inventory Webinar: November 8th. E&E provided a two-hour webinar presentation to all interested working group and consortium members to present the completed Greenhouse Gas Inventory. The presentation was also posted to the ANCA website for public review, and was emailed to the consortium and all working group members. Approximately 35 individuals participated.

The following support material is included in Appendix III:

III-A-Meeting Agendas

III-B-Meeting Reports

III-C-All Working Group Meeting Structure

III-D- Mindmap Images

IV. Selection of additional stakeholders involved

In addition to the core working group members and the consortium, a group of interested stakeholders requested to be updated on the Planning process. These individuals had heard about the Cleaner Greener Project through the website, news articles, newsletters, radio advertisements, from colleagues, etc. This group was notified of public outreach meetings, and received periodic updates as relevant materials were added to the website. A portion of them provided feedback to the Planning Team by way of comments on the goals, and suggestions of potential projects to be included.

V. Public meetings and outreach

Outreach: E & E and/or ANCA staff involved the public in the planning process at each phase of the project through a variety of methods. These included informing the public and requesting feedback via the CGC website, public meetings, the ANCA newsletter, radio announcements on

North Country Public Radio, and newspaper press releases. The CGC website proved to be an important outreach tool. Details regarding the planning process were presented along with outreach related forms such as a goal survey and project requests. ANCA contracted with NCPR as an underwriter running advertisements presenting the Sustainability Plan on a regular basis through mid-November. Additionally, announcements were placed in regional newspapers throughout the planning period.

Public Meetings

E&E and ANCA presented information and sought feedback from the public at several public events including the Common Ground Alliance Annual Forum, the Paul Smiths College Homestead Festival, and the Clean Energy Conference in Lake Placid. Feedback on the goals and potential projects was requested at these events via surveys, face to face contact and requests for follow-up dialogue.

The most intensive outreach occurred during 8 consecutive days of meetings covering the 7-county region. During this time, E & E and ANCA participated in informational exchanges with local stakeholders who presented summaries of existing projects from their region (see Appendix V-B). E & E in turn presented a summary of the planning process to date, including results from the greenhouse gas inventory. Project and goal forms were handed out for completion to attendees. Lastly, a number of individuals contacted ANCA by phone, email, or in person to ask more questions regarding the CGC process. These individuals were included in email regarding Plan progress.

| Date | Location | Host/Event | Attendance |
|------|--|--------------------------------------|------------|
| 6/7 | Essex County-Lake Placid Conference Center | Renewable Energy Conference | 38 |
| 7/18 | Franklin County-Long Lake Pavilion | Common Ground Alliance | 250 |
| 9/29 | Franklin County-Paul Smiths College VIC | Homestead Festival | 40 |
| 10/1 | Hamilton County-Blue Mountain Museum | Indian Lake Revitalization Committee | 12 |
| 10/2 | Clinton County-Clinton Community College | Casella Waste Management | 21 |
| 10/3 | St. Lawrence County-Edward's Knox School | Wood chip heater tour | 5 |
| 10/4 | Jefferson County-Fort Drum | Fort Drum tour and presentation | 13 |
| 10/5 | Essex County-Lake Placid High School | Anaerobic biodigester presentation | 24 |

| | | | |
|------|-------------------------------------|---|----|
| 10/5 | Franklin County-Paul Smiths College | Presentation on sustainability efforts at Paul Smiths College | 15 |
| 10/6 | Lewis County-American Maple Museum | Tour of Croghan mill and dam | 13 |

Comment Period

The Plan was submitted to the Consortium and Working Group members for comment and review in early January. Comments are to be submitted to E&E and ANCA for consideration in the final draft by January 11th using a comment document (see Appendix V-C).

Public Meeting Plan Presentation

A meeting is scheduled to be held at the Wild Center in Tupper Lake on Wednesday, January 23rd for final presentation of the Plan to the public. This meeting will include the option for online comment and viewing for those who cannot travel personally to Tupper Lake. A final comment period will ensue in which the Plan be posted on the ANCA website for public review and comment.

The following support materials are included in Appendix V:

- V-A-Sample of email/save the date
- V-B-Cover page for public outreach presentation
- V-C-Final Plan comment and review form**

VI. North Country Regional Economic Development Council involvement

The NCREDC was updated at all the NCREDC meetings that took place during the course of the development of the Sustainability Plan. Several of the consortium members also play key roles on the NCREDC, either as members or on committees. Their input has been invaluable in terms of aligning both plans. . The Sustainability Plan was reported on as part of the NCREDC 2012 progress report, which was awarded one of the Top Performers in the State. Sustainability is recognized by Council members and in the economic development plan itself as a central component of North Country economic development strategies. In addition, key State agencies (DEC, DOT, APA, DOS, ESD) were also involved in the Working Groups and at meetings throughout the planning process.

VII. Communication methods

Email

The most commonly used method of communication involved email (see Appendix V-A). Several distribution lists were created consisting of all working group members. Email exchanges between

the Planning Team and Working Group members were frequent. A secondary distribution list was also compiled consisting of non-consortium or working group stakeholders who received updates on the Planning process as per their request.

North Country CGC Website

The CGC website, hosted on ANCA's website (www.adirondack.org/green) was used to provide updates and summaries of the CGC process. Documents including the goal survey, project forms, and the greenhouse gas inventory presentation were posted for public feedback and input.

SharePoint Website

A SharePoint Website was created by E&E staff and was used for internal communication between working group members, the planning team and the consortium. The SharePoint website allowed planning team members to post documents, enabling working group members the opportunity to review and comment as their schedules allowed. Additionally the website allowed members the opportunity to communicate with each other and to post supporting material for all to review.

News Releases

Several news releases were posted in area publications including the Press Republican, the Watertown Daily Times, the Adirondack Daily Enterprise and the Hamilton Express. Additionally, ANCA established an underwriting account with North Country Public Radio which also advertised the CGC process up to 8 times per week.

Webinar

A greenhouse gas inventory webinar was conducted for the consortium, working members, and relevant local governmental officials on Thursday, Nov. 8th summarizing the results of the greenhouse gas survey. Approximately 35 individuals were in attendance. The results of the inventory were presented in detail allowing for a Q&A session upon its completion. Additionally, presentation of the final draft of the Plan at the Wild Center is scheduled to be offered as a webcast, allowing individuals to join and comment remotely.

**APPENDIX I-A: NYSERDA/Management team/consultant interaction-North Country
Cleaner Greener Consortium**

| COUNTY | PRIMARY CONTACT | SECONDARY CONTACT |
|-------------------------|---|---|
| Essex County | Garrett Dague Associate Planner | Sue Montgomery Corey Board of Supervisors |
| Franklin County | Tom Leitz County Supervisor | Chastity C. Miller District Manager Franklin County Soil and Water Conservation District |
| Lewis County | Eric Virkler Economic Development and Planning Planner | Renee Beyer Senior Planner |
| Hamilton County | Ann Melious Economic Development and Tourism Director | Bill Farber |
| Clinton County | Rodney Brown Deputy County Administrator, Deputy Clerk of the Legislature | |
| Jefferson County | Don Canfield Director of Planning | Bob Hagemann County Administrator |
| St. Lawrence | Keith Zimmerman Director Planning Office | Jon Montan Retired Planner |

**APPENDIX I-B: NYSDERDA/Management team/consultant interaction-North Country
Cleaner Greener Planning Team**

| | | |
|-----------------|----------------------------------|------|
| Chris Rohner* | Plan Coordinator | E&E |
| Kate Fish | Executive Director, ANCA | ANCA |
| Nicole Parganos | Plan Assistant | E&E |
| Jennifer Perry | Stakeholder Outreach Coordinator | ANCA |

*Chris developed a medical emergency in November which required him to take a leave of absence. Nicole Parganos took over the role of Plan Coordinator for the remainder of the planning period.

APPENDIX I-C: NYSERDA/Management team/consultant interaction-Consortium invitation letter from Essex County as drafted by ANCA

May 31, 2012

Garrett Dague
Deputy County Planner
Office of Community Resources
Essex County
PO Box 217
7533 Court Street
Elizabethtown, NY 12932

Dear Mr Dague,

_____ County agrees to participate in the development of the North Country Cleaner Greener Communities Sustainability Plan. We understand that our involvement will include active participation on the Consortium Leadership Team, and that we will recommend participants for the Working Groups. We understand that each county will be eligible for reimbursements of up to \$8000.00 during the grant period for their participation and that we will need to invoice Essex County for costs associated with this project.

Program Overview

The Cleaner, Greener Communities Program (CGC) was announced by Governor Andrew M. Cuomo in his 2011 State of the State address. The Program will empower the North Country region to create more sustainable communities by funding smart development practices. Essex County was awarded a grant on behalf of the North Country, and will be working with the Planning Team Adirondack North Country Association (ANCA) and Ecology and Environment (E&E) and partnering with public and private experts across a wide range of fields, along with community residents, to lead the development of a regional sustainability plan and implementation strategy which will guide the funding of projects that will significantly improve the economic and environmental health of their areas. This effort will guide integrated, sustainable solutions-from statewide investments to regional decision-making on land use, housing, transportation, infrastructure, energy, and environmental practices-to improve our quality of life.

Phase I of the program is intended to provide the necessary resources for each region to develop a comprehensive sustainability plan. Phase II funding will be provided on a competitive basis for the implementation of specific projects that provide the greatest opportunities for achieving goals outlined in the sustainability plan.

County Involvement

The CGC program requires that each funded region create a Consortium with membership of all counties, engaging them in a planning process to develop the Regional Sustainability Plan. The Planning Team is seeking to develop a planning process that is strongly connected to county and municipal governments.

The following is a general description of the responsibilities that the County agrees to support:

Consortium Leadership Group Members

The members of the Consortium Leadership Group will be responsible for working with the county level government to engage in program development, working with local municipalities, organizations, associations, etc. and for garnering program support. They will also be responsible for reviewing project

deliverables and progress at key points in the plan development process and advising the Planning Team on strategy and policy decisions.

Working Groups

Working Groups are being formed to develop materials for the Plan. Members of the Working Groups will come from various sources: government staff, local experts, involved citizens, and business leaders, non-profit and other organizations. These groups will be facilitated by ANCA and E&E and will focus on the following topics:

- Energy
- Economic Development
- Transportation
- Waste Treatment
- Water Treatment
- Working Landscapes
- Land Use/Livable Communities

We are delighted to be part of this important statewide initiative.

Sincerely,

APPENDIX II-A: Focus Area Working Group Selection-Working Group Invitation Letter

First Name Last Name
Employer
Job Title

Dear First Name,

We would like to invite you to participate in a Working Group being formed to support the development of a Sustainability Plan for the North Country. This initiative is Phase One of a \$100M Statewide Cleaner Greener Communities program that has just been announced by Governor Andrew Cuomo. Essex County received a grant on behalf of the seven county North Country as part of the winning North Country Regional Economic Development Plan award announced in December 2011. The North Country region encompasses Franklin, Essex, Hamilton, Jefferson, Clinton, St. Lawrence and Lewis Counties.

The Program empowers regions to create more sustainable communities by funding smart development practices. Planning teams are partnering with public and private experts across a wide range of fields, along with community residents, to lead the development of regional sustainability plans and to implement the projects that will significantly improve the economic and environmental health of their areas. This effort will guide integrated, sustainable solutions—from statewide investments to regional decision-making on land use, housing, transportation, infrastructure, energy, and environmental practices—to improve our quality of life.

Project Goals

This plan (dubbed the North Country Homegrown Sustainability Plan) will outline tangible actions for improving the long-term sustainability of our communities, municipalities, businesses, residents and our natural capital. The final Plan will include:

- A Greenhouse Gas Inventory, building on the Statewide inventory currently being developed by NYSERDA
 - A baseline assessment of the region
- Sustainability Indicators and Targets
 - Including goals in each of the following areas: reducing energy use and increasing use of renewable, local resources; transportation; land use and livable communities; waste and water management; agriculture and forestry; and economic development
- An implementation strategy
 - Immediate and short-term projects and programs to get work moving now

This stakeholder-driven plan will help identify projects that could be eligible for funding in Phase Two of this program. This phase is expected to launch in 2013 and will provide funding, awarded on a competitive basis, for the implementation of specific projects that are consistent with the goals laid out in the sustainability plans developed by each region.

Project Organization

The Plan will be prepared by a Planning Team including Ecology and Environment, Inc. (E & E), the Adirondack North Country Association (ANCA), and Essex County, with oversight by a Consortium comprising representatives of the seven counties. The Planning Team will provide

program support, information sharing, and project progress review as well as assistance with data collection, identification and outreach to stakeholders, and review of project deliverables. Topic-specific Working Groups are being formed to bring stakeholder knowledge into each focus area of the regional planning effort.

Working Groups

The Working Groups will be facilitated by project staff and each will comprise of ten to twenty members of municipal and local governments, universities, businesses, state agencies, and not-for-profits. Working Group members will be asked to contribute to and evaluate strategies, projects, and initiatives for inclusion in the Plan.

The following Working Groups have been identified for evaluation and inclusion in the Plan: **Energy, Transportation, Land Use and Livable Communities, Waste Management, Water Management, Working Landscapes and Economic Development.**

You are being invited to participate in the in the Transportation Working Group. We are seeking your active participation through October 31, 2012, to provide your expertise during two meetings, several conference calls, and public input events as appropriate.

The Transportation Working Group is tasked to evaluate Transportation practices and infrastructure throughout the North Country and to determine strategies to implement a transportation system tailored to the specific needs and resources of the North Country.

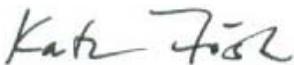
The first Transportation Working Group conference call is scheduled on Tuesday, July 3rd from 1:00-2:00.

The first Transportation Working Group meeting is scheduled on July 16th at the Wild Center, from 10:00-1:00.

If you are interested and available to participate, please confirm your participation to Jennifer Perry at jperry@adirondack.org or by phone at 518-891-6200 or 518-588-2965. She is also available to answer any questions.

Thank you in advance for your participation in this important project. If you have any questions About this project or your potential involvement, please do not hesitate to contact me.

Sincerely,



Kate Fish
Executive Director
Adirondack North Country Association
518-891-6200
518 222 6500

**APPENDIX II-B: Focus Area Working Group Selection-Cleaner Greener Communities
Working Group Members**

| <u>Working Group</u> | <u>First Name</u> | <u>Last Name</u> | <u>Employer/Affiliation</u> | <u>County</u> |
|-----------------------------|--------------------------|-------------------------|--|----------------------|
| Energy | Curt | Gervich | SUNY Plattsburgh | Clinton |
| Energy | Curt | Snyder | Crest Solar | Clinton |
| Energy | Jim | Murray | Greenway Energy Solutions, Inc | Clinton |
| Energy | Dan | Mason | North Country Clean Energy Conference | Essex |
| Energy | Jeff | Woods | North Country School | Essex |
| Energy | Jennifer | Monroe | Community Power Network of NYS | Essex |
| Energy | John | Culpepper | North Country Camp Treetops | Essex |
| Energy | Larry | Masters | Biologist | Essex |
| Energy | Matt | Foley | Riverrat Glass and Electric/Azure Mountain Power | Essex |
| Energy | David | Trudeau | Honeywell | Franklin |
| Energy | Greg | Hart | Workforce Development Institute | Franklin |
| Energy | Jamie | Rogers | ANCA | Franklin |
| Energy | Stephanie | Ratcliffe | The Wild Center | Franklin |
| Energy | Jack | Valentine | Town of Indian Lake | Hamilton |
| Energy | Jon | Voorheers | Indian Lake Hydro | Hamilton |
| Energy | Augustus | Withington | Fourth Coast | Jefferson |
| Energy | Judy | Drabicki | NYS DEC | Jefferson |
| Energy | Vanessa Lynn | McKinney | Cornell Cooperative Extension | Jefferson |
| Energy | Kate | Malinowski | NYS Tug Hill Commission | Jefferson/Lewis |
| Energy | Glen | Gagnier | Lewis Co Development Corporation | Lewis |
| Energy | Joseph | Lawrence | Cornell Cooperative | Lewis |

| | | | | |
|--------|---------|---------------------|--|--------------|
| | | | Extension | |
| Energy | Katie | Liendecker | Village of Lyons Falls | Lewis |
| Energy | Jeff | Forward | Yellow Wood | Regional |
| Energy | Art | Garno | SUNY Canton | St Lawrence |
| Energy | Dan | Parker | Kruger Energy Inc. | St Lawrence |
| Energy | Jason | Clark | Business Development Corporation Greater Massena | St Lawrence |
| Energy | Amanda | Lavigne | St. Lawrence University | St. Lawrence |
| Energy | Ben | Dixon | St. Lawrence University | St. Lawrence |
| Energy | Doug | Welch | SLS Energy Task Force | St. Lawrence |
| Energy | Jill | Chamberlain Winters | NY Power Authority | St. Lawrence |
| Energy | Jon | Montan | St. Lawrence County | St. Lawrence |
| Energy | Klaus | Proemm | NYS Office of Temporary & Disability Assistance | St. Lawrence |
| Energy | Leigh | Rodriguez | St Law Co Industrial Development Agency | St. Lawrence |
| Energy | Patrick | Kelly | St Law Co Industrial Development Agency | St. Lawrence |
| Energy | Relani | Prudhomme | The Occupational Health Clinical Center of the North Country | St. Lawrence |
| Energy | Richard | Burns | National Grid | St. Lawrence |
| Energy | Robin | McClellan | SUNY Canton | St. Lawrence |
| Energy | Stephen | Bird | Clarkson University | St. Lawrence |
| Energy | Susan | Powers | Clarkson University | St. Lawrence |
| Energy | Ann | Heidenreich | SLC No Country Symposium/Energy Task Force | St. Lawrence |
| Energy | Carol | Murphy | Alliance for Clean Energy New York | Regional |
| Energy | Fred | Hanss | Potsdam Office of Planning and Economic Development | St. Lawrence |

| | | | | |
|----------------------|----------|------------|---|-----------|
| Energy | Maria | Leonardi | Northern Forest Center | Regional |
| Energy | Rob | Campany | Fourth Coast | Jefferson |
| Energy | Sean | Ross | Lyme Timber | Regional |
| Energy | Tom | Beck | ReEnergy Holdings | Regional |
| Energy | Joe | Short | Northern Forest Center | Regional |
| Economic Development | Erin | Hynes | The Development Corporation | Clinton |
| Economic Development | Dave | Mason | Keene Broadband Project | Essex |
| Economic Development | Jenn | Holdereid | The Golden Arrow | Essex |
| Economic Development | Zoe | Smith | Wildlife Conservation Society | Franklin |
| Economic Development | J.Justin | Woods | Ticonderoga Revitalization Alliance | Hamilton |
| Economic Development | Carl | McLaughlin | Fort Drum Regional Liaison Organization | Jefferson |
| Economic Development | Dave | Zembiec | JCIDA | Jefferson |
| Economic Development | Eric | Constance | Small Business Development | Jefferson |
| Economic Development | John | Bartow | Tug Hill Commission | Jefferson |
| Economic Development | Tom | Sauter | DANC | Jefferson |
| Economic Development | Rick | Porter | Lewis Co. IDA | Lewis |
| Economic Development | Dan | Kelleher | The Adirondack Park Agency | Regional |
| Economic | Steve | Erman | ANCA | Regional |

| | | | | |
|------------------------------|---------|----------|---|--------------|
| Development | | | | |
| Economic Development | Brian | Wells | Town of Indian Lake | Hamilton |
| Economic Development | Craig | Brashaer | Tahawus Lodge Center | Essex |
| Economic Development | David | Dungate | ACT Bioenergy LLC | Regional |
| Economic Development | Ernest | Hohmeyer | Hohmeyer Lodge Lake Clear | Franklin |
| Economic Development | Jim | Murphy | Adirondack Economic Development Corporation | Regional |
| Economic Development | Pat | Curran | Curran Renewable | St. Lawrence |
| Economic Development | Paul | Shatsoff | Workforce Dev. Inst. | Regional |
| Economic Development | Rebecca | Kelly | Tahawus Lodge Center | Essex |
| Economic Development | Scott | Travers | Minas Basin Pulp & Power Co. Ltd. | Regional |
| Land Use/Livable Communities | Glen | Cutter | Clinton County Planning Department | Clinton |
| Land Use/Livable Communities | Alan | Hipps | Housing Assistance Program of Essex Co | Essex |
| Land Use/Livable Communities | Emily | Kilburn | Adk Community Housing Trust | Essex |
| Land Use/Livable Communities | Hilary | Smith | The Nature Conservancy | Essex |
| Land Use/Livable Communities | Jim | Herman | Adk Futures | Essex |
| Land Use/Livable Communities | Leslie | Karasin | Wildlife Conservation Society | Essex |

| | | | | |
|------------------------------|----------|--------------|--|----------------|
| Land Use/Livable Communities | Ray | Curran | Adirondack Sustainable Communities | Essex |
| Land Use/Livable Communities | Stu | Baker | Ticonderoga Planning Board | Essex |
| Land Use/Livable Communities | Boyce | Sherwin | Regional Solutions | Franklin |
| Land Use/Livable Communities | Brett | McLeod | Paul Smiths College | Franklin |
| Land Use/Livable Communities | Dan | Spada | APA | Franklin |
| Land Use/Livable Communities | Ellen | Beberman | Common Ground Garden/AFMC | Franklin |
| Land Use/Livable Communities | Mary | Scharf | Town of Malone | Franklin |
| Land Use/Livable Communities | Todd | Smith | Adirondack Sustainable Communities | Franklin |
| Land Use/Livable Communities | Jesse | Schwartzberg | Black Mountain Design Build LLC | Franklin/Essex |
| Land Use/Livable Communities | Brenda | Valentine | Indian Lake Main Street Revitalization Committee | Hamilton |
| Land Use/Livable Communities | Andrew | Nevin | Jefferson County Planning Department | Jefferson |
| Land Use/Livable Communities | David | Crandall | Environmental Design and Research | Jefferson |
| Land Use/Livable Communities | Denise | Young | Fort Drum Regional Health Planning Organ. | Jefferson |
| Land Use/Livable Communities | Faith | Lustik | Jefferson County Public Health | Jefferson |
| Land Use/Livable Communities | Jennifer | Voss | Jefferson County Planning Department | Jefferson |
| Land Use/Livable | Kristi | Dippel | Clayton Local Development | Jefferson |

| | | | | |
|------------------------------|--------------|---------------|--|--------------|
| Communities | | | Corp | |
| Land Use/Livable Communities | Phil | Street | Tug Hill Commission | Jefferson |
| Land Use/Livable Communities | Vanessa Lynn | McKinney | Cornell Cooperative Extension | Jefferson |
| Land Use/Livable Communities | Renee | Beyer | Lewis Co Planning Department | Lewis |
| Land Use/Livable Communities | Richard | Grover | Earthworks | St Lawrence |
| Land Use/Livable Communities | Doug | Welch | St Lawrence Co Planning Board/North Country Symposium | St Lawrence |
| Land Use/Livable Communities | Mark | Dzwonczyk | Nicholville Telephone Co | St Lawrence |
| Land Use/Livable Communities | Chelle | Lindahl | Adk Sustainable Living Project | St. Lawrence |
| Land Use/Livable Communities | Kristen | VanHodzeweche | SUNY Potsdam | St. Lawrence |
| Land Use/Livable Communities | Relani | Prudhomme | The Occupational Health Clinical Center of the North Country | St. Lawrence |
| Land Use/Livable Communities | David | Wurzburg | United Helpers | Clinton |
| Land Use/Livable Communities | Greg | Hill | Retired | Franklin |
| Land Use/Livable Communities | James | Martin | The LA group | Regional |
| Land Use/Livable Communities | Jamie | Konkoski | Public Health | Franklin |
| Land Use/Livable Communities | Ron | Testa | RJ Testa and Associates Architects | Regional |
| Transportation | James | Bosley | Clinton Co Public Transportation | Clinton |

| | | | | |
|----------------|---------|-----------|--|--------------|
| Transportation | Nancy | Dougal | Essex County | Essex |
| Transportation | Randy | Douglas | Town of Jay | Essex Co |
| Transportation | Jim | Ellis | Adirondack Scenic Railroad | Franklin |
| Transportation | Stephen | DeHond | Green Circle | Franklin |
| Transportation | Tracy | Eldridge | Hamilton Co | Hamilton Co |
| Transportation | David | Bradford | SUNY Canton | Jefferson |
| Transportation | Hartley | Bonisteel | Jefferson County Planning Dept. | Jefferson |
| Transportation | Howard | Ganter | Jefferson Rehabilitation Center | Jefferson |
| Transportation | Robert | Freemen | Freeman Bus/Clarence Henry Coach | Jefferson |
| Transportation | Scott | Docteur | DOT Region 7 | Regional |
| Transportation | John | Casserly | Yes 11! | St. Lawrence |
| Transportation | Toby | Bogart | St. Lawrence Co | St. Lawrence |
| Transportation | John | Danis | Development Authority of the North Country | Regional |
| Transportation | John | Hutchins | Frank Co | Franklin |
| Transportation | Dawn | Klemm | Remsen-Lake Placid Travel Corridor NYSDOT | Oneida |
| Transportation | Joseph | Langs | Lewis Co | Lewis |
| Transportation | James | Lawrence | Jefferson Co | Jeff Co |
| Transportation | Gerardo | Mendoza | NYSDOT | Multiple |
| Transportation | Sam | Purington | Volunteer Transportation Center | Jefferson |
| Transportation | Barbara | Piersma | Adirondack Scenic Railroad | Regional |
| Transportation | Albert | Rascoe | Clinton Co | Clinton |
| Transportation | Nancy | Robert | St Lawrence Co | St. Lawrence |
| Transportation | David | Rotella | Essex Co | Essex Co |
| Transportation | Mary | Shantie | Franklin County | Franklin |

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|--------------------|------------|----------|--|-----------|
| Transportation | Denise | Watso | Department of Transportation | Regional |
| Transportation | Kathy | Webster | City of Watertown | Jefferson |
| Working Landscapes | Anita | Demming | Cornell Cooperative Extension | Clinton |
| Working Landscapes | Peter | Hagar | Cornell Cooperative Extension | Clinton |
| Working Landscapes | Tony | LaPierre | Clinton Co Farm Bureau | Clinton |
| Working Landscapes | Connie | Prickett | Adirondack Land Trust | Essex |
| Working Landscapes | Daniel | Spada | Adirondack Park Agency | Essex |
| Working Landscapes | Laurie | Davis | Adirondack Harvest | Essex |
| Working Landscapes | Robert | Stegeman | Department of Environmental Conservation | Essex |
| Working Landscapes | Bernadette | Logazar | Cornell Cooperative Extension | Franklin |
| Working Landscapes | Brett | McLeod | Paul Smiths College | Franklin |
| Working Landscapes | Chastity | Miller | Franklin Co SWCD | Franklin |
| Working Landscapes | Joe | Orefice | Paul Smiths College | Franklin |
| Working Landscapes | Melinda | Little | Farm to Family Food Network | Franklin |
| Working Landscapes | Sean | Ross | Lyme Timber | Franklin |
| Working Landscapes | Travis | Zedick | Sudexo | Franklin |
| Working | Rich | Redman | | Franklin |

| | | | | |
|--------------------|--------------|-----------------|---|-----------|
| Landscapes | | | | |
| Working Landscapes | Brian | Wohnsiedler | Jefferson County Soil and Water Conservation District | Jefferson |
| Working Landscapes | Jay | Matteson | Jeff County Ag Development Corp | Jefferson |
| Working Landscapes | Jennifer | Harvill | NYS Tughill Commission | Jefferson |
| Working Landscapes | John | Bartow | Tughill Commission | Jefferson |
| Working Landscapes | Michael | Richardson | Fort Drum Plans, Analysis and Integration Office | Jefferson |
| Working Landscapes | Vanessa Lynn | McKinney | Cornell Cooperative Extension | Jefferson |
| Working Landscapes | Linda | Garrett | Tughill Tomorrow Trust | Lewis |
| Working Landscapes | Michele | Ledoux | Cornell Cooperative Extension | Lewis |
| Working Landscapes | Colin | Beier | SUNY ESF | Regional |
| Working Landscapes | Eric | Dumond | RE Energy | Regional |
| Working Landscapes | Hilary | Smith | The Nature Conservancy | Regional |
| Working Landscapes | Jeff | Forward | Yellow Wood | Regional |
| Working Landscapes | Neil | Woodworth | Adirondack Mountain Club | Regional |
| Working Landscapes | Sarah | Metzgar Boggess | RE Energy | Regional |
| Working | Sloane | Crawford | Department of Environmental | Regional |

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|----------------------|----------|----------|---|---|
| Landscapes | | | Conservation | |
| Working Landscapes | Timothy | Barnett | The Nature Conservancy | Regional |
| Working Landscapes | Thomas | Cutter | | St. Lawrence |
| Working Landscapes | Chelle | Lindahl | Adk Sustainable Living Project | St. Lawrence |
| Working Landscapes | Pat | Curran | Curran Renewable Energy | St. Lawrence |
| Working Landscapes | Ross | Whaley | ADK Landowners | St. Lawrence |
| Materials Management | Jonathon | Ruff | City of Plattsburgh | Clinton |
| Materials Management | Dave | Reckahn | Essex Co Solid Waste Department | Essex |
| Materials Management | Tammy | Morgan | Lake Placid High School | Essex |
| Materials Management | Victor | Putman | Greater Adirondack Resource Conservation and Development Council, Inc | Essex |
| Materials Management | Jill | Wood | Franklin Country Solid Waste | Franklin |
| Materials Management | Tracy | Eldridge | Hamilton County | Hamilton |
| Materials Management | Jennifer | Lauzon | Department of Environmental Conservation | Jefferson, Lewis, and St. Lawrence Region 6 |
| Materials Management | Eugene | Hayes | City of Watertown | Jefferson |
| Materials Management | Jim | Lawrence | Jefferson County Recycling | Jefferson |
| Materials | Richard | LeClerc | DANC | Jefferson |

| | | | | |
|----------------------|----------|-----------|---|-------------|
| Management | | | | |
| Materials Management | Sue | Lyndaker | Lewis County Solid Waste | Lewis |
| Materials Management | Richard | Gast | Cornell Cooperative Extension | Regional |
| Materials Management | William | Meyers | Casella Waste Management | Regional |
| Materials Management | Scott | Thornhill | St. Lawrence Co Solid Waste Dept | St Lawrence |
| Materials Management | Rich | Straut | Barton and Loguidice | Regional |
| Water Management | Nichelle | Billhardt | Lewis County SWCD | Lewis |
| Water Management | Allison | Buckley | Adirondack Council | Essex |
| Water Management | Kris | Dimmick | Bernier Carr and Associates | Jefferson |
| Water Management | Fred | Dunlap | NY Department of Environmental Conservation | Clinton |
| Water Management | Diane | Fish | Adirondack Council | Regional |
| Water Management | Nate | Grue | Clinton Co SWCD | Clinton |
| Water Management | Bill | Henninger | Village of Potsdam | St Lawrence |
| Water Management | Eric | Holmlund | Paul Smiths College | Franklin |
| Water Management | Dawn | Howard | St. Lawrence County | St Lawrence |
| Water Management | John | Kanoza | Clinton Co Department of Health | Clinton |

| | | | | |
|------------------|-----------|-------------|---|-----------|
| Water Management | Dan | Kelting | Paul Smiths College | Franklin |
| Water Management | Bill | Lupo | Department of Environmental Conservation | Regional |
| Water Management | Elizabeth | Mangle | Hamilton Co SWCD | Hamilton |
| Water Management | Chastity | Miller | Franklin Co SWCD | Franklin |
| Water Management | Corrie | Miller | Ausable River Association | Essex |
| Water Management | Bryon | Perry | Development Authority of the North Country | Jefferson |
| Water Management | Vic | Putman | Greater Adirondack RC&D Council | Regional |
| Water Management | David | Reckahn | Essex County | Essex |
| Water Management | Debbie | Rice | | Essex |
| Water Management | Michael | Sligar | City of Watertown | Jefferson |
| Water Management | Rich | Straut | Barton and Loguidice | Regional |
| Water Management | Brian | Wohnsiedler | Jefferson County Soil and Water Conservation District | Jefferson |

APPENDIX III-A: Working group meeting schedule/format-Meeting agendas Round One Conference Call

North Country Region – NYSERDA Cleaner, Greener Communities Grant Program

Call in: 800-747-5150 Code: 3886176

Agenda

Objective: To introduce the Energy Working Group members to the Clean, Greener Communities Grant Program and begin discussions on moving forward with Energy Working Group tasks.

Meeting Agenda:

- 1) Program Introduction
 - a. Program overview
 - b. Program deliverables
 - c. Long- and short-term sustainability goals overview
 - d. Working Group concept
 - e. Energy Working Group focus area description
 - f. Energy Working Group involvement

 - 2) Energy Metrics Indicators
 - a. General indicator introduction
 - b. Discussion of indicators for the Energy portion of the program

 - 3) Data Needs
 - a. Review of current data
 - i. Gaps
 - b. Compilation of potential data sources
 - c. Data organization and utilization
 - i. Within Energy Working Group
 - ii. Program as a whole

 - 4) Strategies for Implementation
 - a. Program outcome
 - b. Strategy review and analysis
 - c. Energy Working Group involvement
 - d. Discussion on list of projects and strategies to be used for program implementation
-

APPENDIX III-A: Working group meeting schedule/format-Meeting agendas Round two-face to face meetings

North Country Region – NYSEERDA Cleaner, Greener Communities Grant Program

Agenda

Objective: Discuss program goals, indicators, projects, and strategies in relation to the Energy Working Group.

Meeting Agenda:

- 1) Meeting Introduction (11:00)
 - a. Welcome
 - b. Introductions
 - c. Program Introduction: Brief review from June 13 conference call

- 2) Sustainability Goals (11:20)
 - a. Overview
 - b. Energy Working Group focus area description and involvement
 - c. Round table discussion on Regional Opportunities and Constraints
 - d. Discussion on and draft long- and short-term sustainability goals

- 3) Indicators (12:00)
 - a. Discussion of draft indicators
 - i. Review draft indicator memo
 - ii. Review of additional indicators suggested by Group members during/after June 13 conference call
 - b. Breakout groups discussion on indicators (12:15 – working lunch)
 - c. Group finalization of indicators (1:30)
 - d. Data organization and utilization
 - i. Confirm data sets and calculations for chosen indicators
 - ii. Assign data collection roles
 - e. Existing Projects and Case Studies (2:00)
 - f. Identification of existing projects in the North Country
 - g. Integration into the program
 - h. Round table discussion on current projects and case studies

- 4) Strategies for Implementation (2:30)
 - a. Identify projects and strategies for program implementation
 - i. Base on long- and short-term goals and indicators
 - b. Discussion of projects and strategies suggested by Group members

- 5) Closing (**3:00**)
 - a. Review of day and outcomes
 - b. Overview of action items and next steps

APPENDIX III-A: Working group meeting schedule/format-Meeting agendas Round three-conference calls

NYSERDA Cleaner, Greener Communities Grant Program North Country Homegrown Sustainability Plan

Meetings – August 21, 22 & 23

Conference Line: 800-747-5150

Access Code: 7010376

Notes: 1) **E&E NYC and ANCA to attend all calls.** WG –SME’s listed below.

2) Meeting times listed in EST

3) Please develop 4-5 “driving questions” for the meeting to help get the group members thinking about;

- How to take the goals/ideas from concept to reality;
- What really needs to happen, how do they see it happening;
- What is most important in developing projects and the criteria for project selection?

Tuesday, Aug 21st

10:00-11:30 am: Working Landscapes (DW, RS, AD, JW)

1:00-3:00 pm : Energy (JW, CR)

Wednesday Aug 22nd

10:00-11:30am : Land Use Livable Communities (AD, RS)

1:00-2:30pm : Economic Development (RF)

Thursday, Aug 23rd

10:00-11:30: Waste and Water (BS, NP)

1:00-2:30: Transportation (BG)

AGENDA:

1. Project Update.

- a. NYSERDA presentation update to E & E.
- b. Project Public Website.

2. Working Group Report Discussion.

Note: Documents were shared via email as well as uploaded to SharePoint for review.

- a. Discussion, Feedback and Q/A.

3. Indicator List Discussion.

Note: Documents were shared via email as well as uploaded to SharePoint for review.

- a. Discussion, Feedback and Q/A.

4. New Project Ideas Discussion.

- a. Discuss Project Criteria worksheet.

5. Next Steps and Meeting Dates.

6. **SharePoint Update** - Activate Alert Function.

APPENDIX III-A: Working group meeting schedule/format-Meeting agenda-All working group meeting:

All-Group Working Group Meeting 3

Date: October 3, 2012
Time: 9:45AM to 4:00PM
Location: St Lawrence University

Agenda

| Event | Estimated Time |
|---|-----------------------|
| Registration | 9:45 to 10:10 AM |
| Welcome | 10:15 to 10:20 |
| Opening Remarks | 10:20 to 10:40 |
| Project Update and Outcomes for the Day | 10: 40 to 11:00 |
| Break – Reorganize tables and chairs | 11:00 to 11:10 |
| Break Out Session | |
| • Session 1 | 11:10 to 11:40 |
| • Session 2 | 11:45 to 12:15 |
| • Session 3 | 12:20 to 12:50 |
| Lunch | 12:50 to 1:25 |
| Break Out Sessions Continue | |
| • Session 4 | 1:25 to 1:55 |
| • Session 5 | 2:00 to 2:30 |
| • Session 6 | 2:35 to 3:05 |
| Short Break | 5 minutes |
| County Level Review | 3:10 to 3:50 |
| Closing Remarks | 3:50 to 4:00 |

End of the Day

4:00 PM

**APPENDIX III-B: Working group meeting schedule/format-Working Group Reports-
Energy**

Cleaner, Greener Communities Grant Program

DRAFT for Review by Working Group

ENERGY

Table of Contents

- Introduction
- Definition – this is a definition of the Focus Area
- Goals – these are the goals developed by the Working Group
- Opportunities
- Constraints
- Framing Statements – these are statements that were used to help create goals and are meant to further clarify ideas, identify direction, to be used in developing targets, help brainstorm ideas for projects.
 - Governance – identified issues for this subsection
 - Climate Adaptation – identified issues for this subsection
 - Strategies, Topics and Practices Not Included – if needed, noting items that are not included.

1 Introduction

This document is the first of several summaries of key discussion points raised during the deliberations of the energy working group to help structure the energy management component of the North Country Homegrown Sustainability Plan (Plan). As a summary of the discussion at the energy working group meeting June 21, it is not intended to be a report created by the group, nor is it a deliverable from the group. Rather, this and any following summaries are to be used to measure ongoing progress and to stimulate further discussion within the energy working group concerning its eventual input to the Sustainability Plan.

The Plan is being developed under a New York State Energy Research and Development Authority (NYSERDA) Grant as part of the Cleaner, Greener Communities Grant Program. The North Country, consisting of Jefferson, Clinton, Hamilton, Essex, St. Lawrence, Lewis, and Franklin counties, is one of 10 regions eligible for the grant. The North Country has retained a team consisting of Ecology and Environment, Inc. (E & E) and the Adirondack North Country Association (ANCA) to support the process. The energy group is one of six working groups meeting concurrently to help define needs and develop the Plan.

For this initial summary of discussion points, each working group has developed its own format and approach for presenting information. Information will continue to be revised and refined during the discussion process. During final preparation of the sustainability plan it is anticipated that a single report format will be used for all Plan sections.

2 Definition of the Focus Area

The North Country Homegrown Sustainability Plan group seeks to evaluate energy costs and potential energy savings as well as greenhouse gas (GHG) emissions associated with energy generation and use in the North Country. Energy sources considered include electric generation and on-site combustion by building type (residential, commercial, industrial, and institutional). Electricity use was also evaluated. The Plan includes short-, medium-, and long-term based strategies to address the energy efficiency of existing buildings as well as to identify appropriate energy building standards for new construction. The planning team also considered financing tools that support energy efficiency and renewable energy investment; innovative ownership, financing, or leasing mechanisms for renewable energy systems; and community-scale energy systems (e.g., district heating and cooling).

3 Goals of the Sustainability Plan

1. Reduce Energy Use: Promote energy conservation for residents, businesses, industries, schools, and government.
2. Increase Energy Efficiency: Improve the energy performance and efficiency of the region's existing infrastructure (transportation, electrical distribution, water, and wastewater, waste management, and buildings, including rehabilitation of existing housing stock).

3. Develop Renewable Sources: Promote the development of renewable energy technologies such as wind, solar, biomass, and hydropower within the region.
4. Meet regional energy requirements through locally produced energy resources before considering how to export excess energy.

4 Opportunities and Constraints

| OPPORTUNITIES | CONSTRAINTS |
|--|---|
| Energy Use Reduction/Conservation | |
| Reducing energy use is the easiest and cleanest way to free up BTUs. | |
| | |
| Energy Efficiency/Conservation | |
| The Adirondacks can serve as a rural example nationally and state-wide. | |
| | There are political constraints in how efficiency programs are developed (Need more information here). |
| Everyone has the ability to control their use of energy and control regional energy resources. | |
| Programs should be refocused to meet more rural goals and timelines. | Many programs have goals that cannot be obtained by rural regions (e.g., installations, number of retrofits). |
| Community net metering is needed to allow more flexibility in systems (aggregate production). | Needs legislation. |
| Various existing programs have positive outcomes. | Existing programs or projects?? are slow to be completed. |

| OPPORTUNITIES | CONSTRAINTS |
|---|---|
| Renewable Energy Generation | |
| Biomass | |
| Thermal is best option for biomass = heat-wood/grass. | |
| Creates local energy system of resource collection, production, delivery and use. | |
| Creates jobs in forestry and local production jobs. | |
| It can be done on small scale and is local. | |
| NYSERDA is already interested and looking to network programs to gain efficiencies and to better serve the North Country. | |
| Scale appropriate to rural environment. | |
| Wind | |
| | Article 10 needs to be assessed, focusing on community and local processes. |
| Large wind companies need to consider the needs of local communities better. A better which reduces local in-fighting, provides more community benefit is needed. | If region is going to do more large-scale wind it needs to find a process that is not so disruptive to communities. Until now too much infighting and arguments among towns, which hurts communities. |
| Government/Regulations/Markets | |
| Stay focused on local and state markets and regulations | |

| | |
|---|---|
| NYS Power Authority framework. | The State needs to be more efficient, in it ways of helping people move project forward, reduce paperwork, reduce time needed. |
| | The renewable portfolio standard (RPS) needs a to support more smaller scale systems, and providers. Meet rural needs; needs to include municipal as well as residential. |
| | Small projects are not economically feasible: natural gas is driving the price of electricity down so small-scale and renewable projects can't compete without incentives. |
| | Need program to be scaled to regions rather than to a- one-size-fits-all on the state level. |
| | Big utility buy-in needed. |
| | Regulatory constraints on small businesses. |
| | Competition between states (race to the bottom). |
| Use system benefit charges more wisely; let communities decide (rural model). | |
| Opportunity to contribute to the next RPS. | RPS needs to be updated (2004). |
| North Country Power Authority (2010 established). | People noted difficulty – but not defined . <i>Need more feedback from Working Group member.</i> Personality differences noted. <i>What can we do here for this plan? .</i> |
| Transmission | |
| | Constraints on sending power around state (from generation site to population center). <i>Is this an issue of infrastructure or policy, how do we address here?</i> |
| | Improvements needed in the local system to support community renewable projects and net metering. |
| | Storage needed. |

| | |
|--|---|
| | <p>The Federal Energy Regulatory Commission (FERC) environmental regulations need to be adjusted/updated. <i>What are the details here? What can we say in this plan?</i></p> |
|--|---|

5 Framing Statement

The North Country Homegrown Sustainability Plan shall promote energy strategies and practices that will support the goals of the North Country region as follows:

1 Achieve Energy Use Reduction/Conservation

Engage residents to build grass roots support for energy conservation and promote through education by creating local energy working groups in cities, towns, and villages.

2 Promote Energy Efficiency

1. Support local businesses that provide clean energy and energy-efficient services.
2. Promote green energy in tourism, including working with the Green Energy Tourist Board.
3. Encourage implementation of green building programs for new and existing buildings; especially measure reducing current high energy use for heating.
4. Coordinate with existing programs such as NYSERDA’s Green Jobs Green New York, NYSERDA’s Energy Smart Communities, utilities’ energy efficiency programs, NYSERDA’s Empower program, the Wild Center’s Adirondack Climate Action Plan, and other ongoing programs to enhance the rate and scale of energy retrofits.
5. Build contractor awareness of benefits of energy efficiency; offer access to training through SUNY Canton’s Center for Energy Efficiency and Building Science and other training centers.
6. Coordinate with NYSDOL’s Career One-Stop Centers to steer unemployed individuals to training opportunities.
7. Expand referral programs for energy retrofits from homeowner to homeowner and business to business.

3 Develop Renewable Energy Sources

1. Produce enough renewable energy to meet regional demand, prioritizing fully meeting regional needs before exporting excess.
2. Support initiatives to develop renewable energy capacity; include specific objectives set out in the North Country Regional Development Economic Development Plan.
3. Identify challenges that limit development of renewable energy (regulations, permitting, siting, and transmission) and explore ways to address these challenges.
4. Ensure renewable energy generation efforts are scalable so opportunities exist for residents, local businesses and communities to gain a stake in energy development, including employment and training opportunities or local contractors.
5. Develop guidance for small-scale power (renewable) economics.

3.1 Wind Power

1. Investigate best practices and siting (wind mapping) to further develop the North Country as an ideal location for wind power.
2. Develop wind power in a way that is acceptable to the community in which it is placed, whether residential, community, or regional in scope and size.
3. Investigate planning models that reduce negative community impacts and community infighting over development and siting rights.

3.2 Solar Power

1. Investigate successful models of residential and community-based solar power, including solar thermal.
2. Support the expansion of existing capacity of solar electric and solar thermal for residential, commercial, and institutional applications.

3.3 Hydropower

1. Assess economic viability and conduct preliminary evaluations of potential for hydropower, including gathering data on existing dam infrastructure, land-use, property, water conditions, and local transmission infrastructure.
2. Research best practices and current technology for small or micro-hydro installations.
3. Engage landowners, local construction and design companies in full-scale programs.
4. Work with appropriate agencies on any restrictions affecting existing dam structures (Governance).

3.4 Biomass

1. Research best practices and current technology for biomass installations.
2. Engage regional stakeholders, including the existing and potential business sector, forest product companies, agricultural interests, sustainability accreditation organizations, educational institutions, environmental interests and the public.
3. Investigate the issue of what is the region's potential "sustainable yield" or "woodbasket" for use in developing sustainable practices and to understand capacity for biomass expansion and adoption.
4. Identify residential, business, or institutional (public and private) partners who are interested in converting to thermal biomass.
5. Research the "energy life cycle" of biomass and the connectivity of the supply chain management within the region.
6. Use NYSERDA and other funding sources (Department of Agriculture) as well as support from other state agencies (Adirondack Park Agency (APA), NYSDEC) to convert energy systems in the region to use biomass as a thermal fuel source.

Energy Transmission

Engage with power distribution companies to identify challenges to power transmission, storage and distribution and develop solutions.

Identified Connections to other Focus Areas (JW)

Renewable Energy

1. Feasibility- What is the wood resource really? (This could be a project. Getting a real good picture of what the resource is, how it can be used regionally.)

2. Investigate the issue of what else needs to be known about the region’s potential “sustainable yield” or “woodbasket” for use in developing sustainable practices and to understand capacity for biomass expansion and adoption.
3. Solar and Wind: what scale is feasible, commercial or public enterprise?

Where should we focus?

1. Identify the need for pilot programs.
2. Based on evaluation of what the resource is, in terms of energy generation, return on investment, prioritize renewable energy development into short-, medium- and long-term efforts. Initial efforts and projects should be targeted at ‘low-hanging fruit’ to gain traction for renewable energy generation through early successes.

6 Research and Data Sources

Short statements on the primary resources we find

Important Projects

ReEnergy Shrub Willow Biofuel

The U.S. Department of Agriculture (USDA) is investing \$4.3 million to encourage the growth of shrub willow as a renewable energy fuel in central and northern New York. Critical to the project is collaboration between ReEnergy and the SUNY College of Environmental Science

and Forestry (ESF) in Syracuse, which will offer an outreach program to educate local government officials, agricultural leaders, farmers, and landowners about the opportunity to grow shrub willow.

The willow will be grown on marginal farmland throughout a nine-county region and used as fuel for biomass-to-energy facilities that are operated by ReEnergy Holdings LLC. Over the 11-year life of the project, it is expected that almost 400,000 green tons of biomass will be produced and used in the ReEnergy facilities. The willow, which can be harvested every three years, will have the potential to continue producing biomass for at least another decade after the program is completed.

Lyons Falls Mills

The Lewis County Development Corporation (LCDC) recently obtained ownership of an abandoned pulp and paper mill on a 9-acre Brownfield site in downtown Lyons Falls, NY. The LCDC is currently partnering with the Village of Lyons Falls, the County of Lewis, the Lewis County IDA, the NYS Tug Hill Commission, SUNY College of Environmental Sciences and Forestry, Northbrook Lyons Falls, LLC, and Applied Bio-refinery Sciences, LLC actively to redevelop this site into a mixed-use site integrating three related activities:

1. A wood fiber-based bio products technology launch pad. Bioenergy production at this site will allow for the commercialization of multiple bio-products creating the potential for additional businesses to develop in the surrounding area.

2. An existing hydroelectric facility owned by Northbrook Lyons Falls, LLC is intended to expand.
3. A Controlled Environmental Agriculture/ Combined Heat and Power (CEA-CHP) facility. CEA-CHP is a system of growing produce in greenhouses using hydroponic growing systems and power generating/heating systems designed to sell electricity and heat the greenhouses.

Northern Forest Carbon Exchange

A project aimed at helping landowners sell carbon offsets from managed forests.

Contact: Northern Forest Center, Joe Short, Program and Policy Director – Northern Forest Center, jshort@northernforest.org 603-229-0679 x 104

Pellet Boilers

A neighborhood project aimed at developing the residential and light commercial market for fully-automated, highly efficient pellet boilers. Contact: Maria Leonardi – Northern Forest Center mleonardi@northernforest.org, 603-229-0679 x 114

Rodman Highway Garage Solar Panels

Contact: Town of Rodman (Jefferson County), Katie Malinowski, Tug Hill Commission, Gary Stinson, Town Supervisor, supv@frontiernet.net, (315) 232-2522

Rodman Town Hall Solar Panels

Contact: Gary Stinson, Town Supervisor, supv@frontiernet.net, (315) 232-2522

St. Lawrence County Climate Action Plan Project Implementation

Analyses provided in this Climate Action Plan indicate major energy and cost savings can be achieved from the following county projects:

- Vehicle procurement: purchasing vehicles with a fuel economy of 20% higher than EPA 2016 standards
- Establishment of employee commuting/telecommuting programs
- County online vehicle route optimization
- Installation of photovoltaic solar panels on both the County Correctional Facility and the Human Services Center and entering a Power Purchase Agreement (PPA) with either the New York Power Authority or the New York State Energy Research and Development Authority. Using a PPA, the county will not be responsible for the maintenance of the panels, and would simply benefit from the lowered energy costs.

- A green office program should be designed and implemented.
- Participation as an offset mechanism via the reforestation of parts of the County’s forest from timber production.

8 Identified Case Studies

South Lewis Woody Biomass Boiler (Good case study and some lessons to be learned re state education funding), South Lewis School District, Katie Malinowski, Tug Hill Commission

Barry Yette, School Business Administrator, byette@southlewis.org, 315-348-2503

| | | |
|---|--|---|
| <p>Noble Wind Project and Horizon Marble River Wind Project</p> <p>Noble was the first major wind project in the North Country and the first project of its type for the Clinton County IDA. Currently Nobel has windfarms in the Towns of Altona, Chateaugay, Clinton, and Ellenburg. The company’s vision is to be a leading supplier of clean, renewable energy from environmentally responsible facilities that will be a source of pride and benefits to the communities in which they are located. http://www.noblepower.com/</p> <p>Horizon Marble River is the second major wind project in the North Country and the second project of its type for the CCIDA. This project proposes 200 MW of power and is scheduled to be built in the Towns of Clinton and Ellenburg. http://www.horizonwindfarms.com/home/</p> | <p>Clinton County IDA</p> <p>Noble Environmental</p> <p>Horizon Marble River</p> | <p><u>Erin Hynes</u> <u>(emhynes@thedevelopcorp.com)</u></p> <p>Contacts:</p> <p>Jeremy Tucker, Noble Environmental <u>(tucker@noblepower.com)</u></p> <p>Erika Nelson, Horizon Marble River <u>(Erika.nelson@horizonwind.com)</u></p> <p>Adore Kurtz, Executive Director CCIDA <u>(ccida@thedevelopcorp.com)</u></p> |
|---|--|---|

9 Potential Reference Sources

- Kraft Digester
- Lewis County Community Digester
- Heating the NorthEast with Renewable Biomass: A Bold Vision for 2025
- USEPA Boiler Inventory; has inventory of boilers of 100,000 BTU /Hr or larger

- ReEnergy Fort Drum
- <http://www.northernforest.org/default/ny.html>
- Has a huge inventory of projects in NY!! Slightly dated but a really good start.
<http://www.dec.ny.gov/energy/50845.html>
- Climate Smart Communities on DEC's website - Greenhouse Gas Inventories?

**APPENDIX III-B: Working group meeting schedule/format-Working Group Report-
Working Landscapes**

Cleaner, Greener Communities Grant Program

DRAFT for Review by Working Group

Working Landscapes: Agriculture, Forest Resources, Outdoor Recreation

FOR THE REVIEWERS

Table of Contents

- Definition – this is a definition of the Focus Area
- Goals – these are the goals developed by the Working Group
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- Framing Statements – these are statements that were used to help create goals and are meant to further clarify ideas, identify direction, to be used in developing targets, help brainstorm ideas for projects.
- Governance – identified issues for this subsection
- Climate Adaptation – identified issues for this subsection
- Strategies, Topics and Practices Not Included – if needed, noting items which are not included.

1 Introduction

This document is the first of several summaries of key discussion points raised during the deliberations of the working landscape focus group to help structure the working landscape component of the North Country Homegrown Sustainability Plan (Plan). As a summary of the discussion at the working landscape group meeting July 11, it is not intended to be a report created by the group, nor is it a deliverable from the group. Rather, this and any following summaries are to be used to measure ongoing progress and to stimulate further discussion within the working landscape group concerning its eventual input to the Sustainability Plan.

The Plan is being developed under a New York State Energy Research and Development Authority (NYSERDA) grant as part of the Cleaner, Greener Communities Grant Program. The North Country, consisting of Jefferson, Clinton, Hamilton, Essex, St. Lawrence, Lewis, and Franklin counties, is one of 10 regions eligible for the grant. The North Country has retained a team consisting of Ecology and Environment, Inc. (E & E) and the Adirondack North Country Association (ANCA) to support the process. The working landscapes group is one of six working groups meeting concurrently to help define needs and develop the Plan.

For this initial summary of discussion points, each working group has developed its own format and approach for presenting information. Information will continue to be revised and refined during the

discussion process. During final preparation of the sustainability plan it is anticipated that a single report format will be used for all plan sections.

2 Definition of the Focus Area

The North Country Homegrown Sustainability Plan (Plan) shall address agricultural businesses and lands, forest businesses and lands, outdoor recreation and related businesses, and the multiple economic and ecological roles fulfilled by those enterprises and lands as they relate to social, economic, and ecological sustainability.

The agriculture, forestry, and recreational lands implementation strategy will be carefully coordinated with the land use and livable communities, energy, water, and economic development focus area plans. Each of these areas is a vitally important resource for the region. While subregions within the North Country have varying levels of involvement with each of the three areas, taken together they represent the most dominant physical features and drive the economic impacts in the North Country.

3 Goals of the Sustainability Plan

1. Increase the local food and forest product processing and sales within the region.
2. Increase the use of biomass to meet the region’s thermal energy needs.
3. Increase use of the entire region’s recreational resources such as trail systems, facilities, and services; improve the condition of recreational infrastructure; and provide for long-term infrastructure maintenance.
4. Enhance forest management through increased use of best management forestry practices, encouraging third party certifications for sustainability where applicable, and implementing invasive species management and control.
5. Upgrade and maintain existing infrastructure, including housing and equipment for farming and forestry, for energy efficiency and enhancing the region’s attractiveness to tourists and new residents.
6. Expand new farmlands on a selective basis to complement existing surrounding land uses.

4 Opportunities and Constraints

| OPPORTUNITIES | CONSTRAINTS |
|--|--|
| More markets for biomass production. Proper harvesting, storage, and market could create big opportunities with the harvesting, storage, and market. | |
| Food production/greenhouses heated with biomass (jobs, local food, use of low grade biomass for heat) | Lack of local processing plants/processing capacity. Challenges are large-commodity based production versus small-scale local farmers; allocation of funds; and land-large-farms |

| <p style="text-align: center;">OPPORTUNITIES</p> | <p style="text-align: center;">CONSTRAINTS</p> |
|---|---|
| | <p>gobbling up small farms. Slaughterhouse/ animal processing in the region is also limited (Plattsburgh just got approval for a facility).</p> |
| <p>Schools are often the largest building in small communities. Most economical to convert to biomass– connect wood heating with curriculum.</p> | |
| <p>Implement Farm to School programs – healthy, educational, and economical.</p> | <p>USDA inspection process for selling meat and vegetables to restaurants can be prohibitive.</p> |
| <p>Biomass – focus on replication rather than scaling. Can easily repeat in multiple areas. Great for local economy.</p> | <p>NYSERDA concept of large, centralized biomass facilities won’t benefit the small communities in North Country.</p> |
| <p>Branding for locally grown and processed Adirondack wood products. Implement a wood processing facility/area in the North Country to prevent loss to Canada, and increase processing capacity in region. Include wood products industry.</p> | <p>Currently, logs shipped to Canada returns to the region after processing because there is no infrastructure in North Country region to process wood (this is potentially an opportunity).</p> |
| <p>Region can start with small steps and build slowly, people are not looking for mega development. Cash can be hard to raise, need to develop local markets.</p> | <p>No matter what is produced it needs a market. Tough to have the cash to start up and maintain while a market develops. Limited cash flow hinders the resilience of farmers.</p> |
| <p>Region has heavy dairy production and can support businesses like cheese production (as seen in other areas of the state)</p> | |
| <p>Community wide facilities – food co-ops supermarkets and sales locations and Community supported agriculture (CSA)</p> | <p>Local food safety (i.e., how do you get local food into institutions that have strict food safety regulations and rules. There is a risk for the entrepreneur— if someone gets sick the owner can lose farm. State food-safety regulations need to find solutions for small vendors for agriculture/markets.</p> |

| <p style="text-align: center;">OPPORTUNITIES</p> | <p style="text-align: center;">CONSTRAINTS</p> |
|---|--|
| <p>Capitalize on the local food movement. The local food movement is catching on, more so than the organic movement.</p> | <p>Need outlets for food distribution to local residents.</p> |
| <p>All renewable energy involves added jobs, reducing the cost of energy, promoting local “homegrown” economy. Try to promote through schools since school outreach is a good way to reach people.</p> | |
| <p>Distributed local small-scale power generation – renewables, fuel programs. Create a local market not a regional market.</p> | |
| <p>Thermal biomass - much greater efficiencies for biomass when used for heating vs. electric. Biomass used for heating does not require a large scale. Fuel oil expenses make thermal biomass an attractive alternative.</p> | <p>Can biomass meet colder winter needs? (This past winter was mild). And with climate change, are we going to need less heating and more cooling?</p> |
| <p>Lack of natural gas in the region. Helps support renewable options</p> | |
| <p>Systems/strategies need to be adaptable as climate changes.</p> | |
| <p>Land values in North Country are lower, which means protecting lands is affordable.</p> | <p>Funding for land protection.</p> |
| <p>Higher land values can lead to more variety in opportunities</p> | |
| <p>Incentivize working landscapes. Encourage open landscapes to be utilized and encourage new, young farmers who want to work the land. Land Trusts have a relationship to farming and finding farmers to work the land.</p> | <p>Lack of young/new farmers. How to attract new farmers to use the lands that are available. How to transition land from someone who wants to sell/stop farming, to a new farmer? Abundance of unused agriculture lands. Regulatory challenges for local growers. Workforce challenges.</p> |

| <p style="text-align: center;">OPPORTUNITIES</p> | <p style="text-align: center;">CONSTRAINTS</p> |
|---|---|
| <p>Combine recreational infrastructure with wind development. Wind infrastructure on leased land, lands can still be used for other uses.</p> | |
| <p>Development of a bona fide ecotourism presence.</p> | |
| <p>There are innovative ways for communities to benefit from recreational opportunities. More citizen/community ownership of shared aspects – nature preserves, trail rehabilitation, outdoor resources in face of shrinking government presence. Determine how to create community benefits (economically) from their own maintenance of recreation resources.</p> | <p>Loss of access to recreation infrastructure (shrinking role of NYSDEC). Many recreational resources and infrastructure have been lost or damaged recently because of Hurricane Irene. Budget cuts have left areas with little access and poor management How do we improve and make this sustainable? How can local communities draw economic benefits from current tourism? Access to recreation is limited by private ownership of the land.</p> |
| <p>Support locals with small events, for example kayak days, community days – increase people’s knowledge about their own resources, build awareness. Many people recreate in their own towns north of Adirondack park.</p> | <p>Fiscal constraints– local communities cannot afford the cost of maintaining roads and recreational areas. Need to incentivize local investment in public resources, e.g., Moose River Plains Rd. Inlet/Indian Lake. Strategic action is lacking in recreation because of lack of leadership. Need to define/cultivate leadership.</p> |
| <p>View the NC as a region with certain areas producing products best suited to that region to be used locally, e.g. a bioregional relationship between the rich warmer fertile lands of St. Lawrence County and Jefferson County capable of producing food, and the forested Adirondacks capable of producing wood products.</p> | |
| <p>New invasive species legislation</p> | |
| <p>Fort Drum presence - market NY to the base population. Fort Drum is an Army base of 50k, high re-enlistment and retirement. Service people</p> | <p>Transportation to access the Adirondacks – how to minimize impacts in tourism transportation (once people arrive should inter-area transit be</p> |

| OPPORTUNITIES | CONSTRAINTS |
|---|--|
| who get to know the Adirondacks area usually want to stay in the region. | provided?) Tourism – more people driving to the region is counter to sustainability. Concerns of carbon footprint by bringing tourism into the region. |
| Integration of more local individuals into regional recreational opportunities. | |

5 Framing Statement

Agriculture

The Plan shall consider strategies and practices as follows:

1. Strengthen the economic viability of the significant agricultural resources and businesses in the North Country and communities that are supported by those enterprises, including ongoing and long-standing agricultural businesses.
2. Encourage the growth of value-added processing of the North Country’s agricultural supply to reduce energy costs of providing food to the region. Incentivize food manufacturing firms to locate and/or expand in the North Country so that the majority of the food and dairy products are processed and distributed within the region instead of being exported. Encourage sustainable food production and distribution methods.
3. Promote best management practices for sustainable farming and food production in the North Country.
4. Promote the use of integrated pest management programs and other best management practices to reduce the reliance on pesticides by North Country agricultural businesses.
5. Promote environmental stewardship practices by agribusiness, with emphasis on meeting Concentrated Animal Feeding Operations (CAFO) requirements.
6. Foster educational programs at the 10 institutions of higher learning, regional agricultural associations, and local communities in the North Country to build awareness of the economic and environmental benefits of best management practices and other practices, including organic production methods that increase the sustainability of farming.
7. Promote and publicize innovations in sustainable food production. Foster agricultural research in the region that addresses the specific needs and opportunities of the North Country.

8. Conserve prime farmlands designated by the U.S. Department of Agriculture (USDA National Resources Conservation Service). Also conserve lands designated as farmland of statewide importance, farmland of local importance, and unique farmland.
9. Identify and conserve farmlands at greatest risk of being developed.
10. Promote agricultural use on suitable lands that have existing non-agricultural uses. Encourage continued agricultural use of productive farmland.
11. Encourage agricultural programs and processes that prevent the spread of invasive species. Encourage the continued management and control of invasive species and promote education programs to maintain the ecological balance in the region.
12. Encourage the region's farming industry to continue to maximize direct and wholesale marketing to local consumers, institutions and businesses. Foster programs that incentivize farms within the region to direct-market and sell wholesale.
13. Promote weekly farmers market programs that provide local produce in rural towns, villages, and hamlets.
14. Promote community-based and local food production through the distribution and sale of local farm products in North Country grocery stores and farmers markets.
15. Promote local food production through sales to institutional buyers in the region such as schools and large businesses.
16. Increase direct access to high quality foods by incentivizing community gardens within North Country towns, villages, and hamlets.
17. Reduce distance food is transported to minimize the energy costs and environmental impacts, and to increase North Country residents' access to locally grown foods by improving distribution and marketing facilities and processes.
18. Encourage farmers market programs to accept WIC or federal food assistance coupons (where not already accepted) as payments to increase access to locally grown food at all income levels.
19. Promote eco- and agri-tourism programs in the region.
20. Foster more efficient uses of energy inputs and natural resources produced on the land of the region.
21. Decrease farm operation costs through renewable energy conversions and using agricultural by-products for energy production.

22. Reduce operating costs and save energy through development of energy audits and energy management plans and by facilitating upgrades and modernization of farm facilities with energy/fuel-efficient equipment.
23. Provide adequate incentives, including financial assistance, for farm enterprises to invest funds, labor, and management resources in energy efficiency technologies and methods.
24. Educate students, consumers, taxpayers, and local officials about:
 - a. The benefits of retaining agricultural enterprises and keeping farmland in production.
 - b. The relatively lower demand for taxpayer provided services of farmland and forest land.
 - c. The connections between farming and the health of the region's economy and quality of life.
25. Investigate the feasibility of setting up a regional agricultural entity (non-profit or "council") to coordinate efforts to retain and modernize agricultural businesses and improve their economic and environmental sustainability.

Forest Resources

The Plan shall consider the following strategies and practices:

1. Strengthen the economic viability of forestry enterprises and communities that are supported by those enterprises.
2. Promote the growth of sustainable forestry-related industries.
3. Capitalize on the forest resources, timber production, and under-utilized land as sources for renewable energy through investigation of strategies to generate renewable biomass for conversion to fuel.
4. Encourage fuel generated from renewable biomass to meet local energy needs in the North Country.
5. Promote and encourage sustainable forestry management and timber production programs.
 - a. Encourage North Country forest owners and managers to become Forest Stewardship Council (FSC)-certified (FSC Forest Management Certification) to demonstrate that their forests are managed responsibly in compliance with social and environmental standards.
 - b. Encourage North Country timber manufacturers, processors, and traders to obtain FSC chain-of-custody certification to confirm FSC-certified wood products are kept separate from uncertified products.
6. Foster educational programs that promote sustainable forestry management and timber production programs at the 10 institutions of higher learning, regional forestry associations, and local communities within the North Country. Increase awareness of FSC certification

and the access it can provide to new markets including highly environmentally sensitive markets.

7. Encourage the reduction of vehicle miles traveled (VMT), alternative fuel use, or other emission-reduction methods for the region's exported forest products. (Forest products have the region's top location quotient, indicating export beyond the region's boundaries).
8. Encourage forestry programs and processes that prevent the spread of invasive species. Encourage the continued control and management of invasive species and promote education programs to maintain the ecological balance in the region.
9. Provide adequate incentives, including financial assistance, for forestry enterprises to invest funds, labor, and management resources in energy efficiency technologies and methods.

Outdoor Recreation

The Plan shall consider the following strategies and practices:

1. Capitalize on the many areas of the North Country's natural capital such as the 1000 Islands/St. Lawrence River, Lake Champlain, Tug Hill Plateau and the Adirondack Park among others to promote low impact recreation and eco-tourism opportunities.
2. Promote the recreational venues near the Olympic Training Center in Lake Placid. Encourage integrating sustainable management and building practices for new and existing outdoor recreation facilities at Lake Placid.
3. Promote conservation of the region's varied open spaces for outdoor recreation opportunities. Foster educational programs that coincide with outdoor recreation activities to increase awareness of the benefits of maintaining healthy ecological processes, implementing conservation measures, low environmental impact recreation activities, etc.
4. Promote the North Country's natural capital and outdoor recreation opportunities to the potential visitor population in the U.S. and Canada who live within a day's drive of the region. Promote the region as a destination for the environmentally conscious traveler.
5. Promote education programs to prevent importing or spreading invasive species through recreational activities in order to maintain the ecological balance in the region.
6. Encourage green building practices for lodging and tourism related venues related to outdoor recreation in the North Country.
7. Attract tourists from urban and suburban areas by promoting and maintaining the North Country's open spaces that contribute to the region having the largest "dark sky" in the

northeast U.S. Encourage outdoor lighting that meets light pollution reduction standards within towns, villages, hamlets, and outdoor destinations.

8. Promote incentives for outdoor recreation tourism businesses to utilize clean energy technologies.

6 Governance [Placeholder]

7 Climate Adaptation [Placeholder]

8 Strategies, Topics, and Practices Not Included

Where strategies and practices addressing working landscapes where they primarily relate to other focus areas, this plan will defer to those other focus area plans. For example:

- Land use designations and land management policy that will reduce residential sprawl and promote the continued operation of agricultural businesses will be covered in depth in the land use and livable communities focus area.
- Biomass industry strategies and details related to fostering the industry as a whole will be covered under the energy focus area. Other strategies directly related to growing biomass as a renewable energy source will be covered under the working landscapes focus area.
- Watershed conservation and water quality improvement strategies related to agricultural practices will be covered in-depth in the water focus area. Promotion of the use of best management practices will be covered under the working landscapes focus area.

9 Identified Connections

See above as some initial notes on this subject.

Use the notes, and your own powers of mental observation, to begin to tie some of the WG ideas together, make notes. Once we all develop our own reports, we can share them, and fill this section out more. Can be done as bullets or a table.

10 Research and Data Sources

Short statements on the primary resources we find.

11 Important Projects

Short statements on the primary projects we find.

12 Identified Case Studies

- CSA Model – Essex Farm
Long Lake Inlet – potential leadership model

**APPENDIX III-B: Working group meeting schedule/format-Working Group Reports-
Economic Development**

Cleaner Greener Communities Grant Program

DRAFT for Review by Working Group

Economic Development

FOR THE REVIEWERS

Table of Contents

- Introduction
- Definition – this is a definition of the Focus Area
- Goals – these are the goals developed by the Working Group
- Opportunities
- Constraints
- Framing Statements – these are statements that were used to help create goals and are meant to further clarify ideas, identify direction, to be used in developing targets, help brainstorm ideas for projects.
 - Governance – identified issues for this subsection
 - Climate Adaptation – identified issues for this subsection
 - Strategies, Topics and Practices Not Included – if needed, noting items which are not included.

1 Introduction

This document is the first of several summaries of key discussion points raised during the deliberations of the energy working group to help structure the economic development component of the North Country Homegrown Sustainability Plan (Plan). As a summary of the discussion at the economic development working group meeting July 12, it is not intended to be a report created by the group, nor is it a deliverable from the group. Rather, this and any following summaries are to be used to measure ongoing progress and to stimulate further discussion within the economic development working group concerning its eventual input to the Sustainability Plan.

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For this initial summary of discussion points, each working group has developed its own format and approach for presenting information. Information will continue to be revised and refined during the discussion process. During final preparation of the sustainability plan it is anticipated that a single report format will be used for all plan sections.

2 Definition of the Focus Area

The North Country Homegrown Sustainability Plan's implementation strategy will carefully coordinated with the region's economic development strategic plan, *Transformational – Leading the Economic Renaissance of New York's Small Cities and Rural Communities – North Country Regional Economic Development Council Strategic Plan*. The economic development benefits of the implementation strategies identified in the plan shall be quantified and the report shall address how the goals of the sustainability plan intersect with and support those of the strategic plan. The planning team shall work closely with the regional economic development council (REDC) throughout the planning process to ensure that the strategies identified by the two plans support both the economic development and sustainability goals of the region whenever possible.

Economic development is an integral part of all the other focus areas—energy use and management; transportation; water use and waste management; livable communities and land use; and the working landscape, i.e., land used for agriculture, forestry, and outdoor recreation—and must be coordinated with these focus areas plans.

3 Goals of the Sustainability Plan

Economic development goals evolved from the framing statements noted below. The economic development working group proposed/developed the following goals:

1. Promote a local economy by encouraging the use of local products, incentivizing local processing of materials and goods, and increasing local jobs.
2. Promote a year-round economy that highlights seasonal activities and is adaptable to possible future variations in climate patterns and industry changes.
3. Encourage community identity, possibly through localized and regional branding to support economic growth and tourism. Focus on expanding centers of existing tourism to new areas.
4. Reduce infrastructure operating and maintenance costs by implementing sustainable practices and energy efficiency projects.
5. Increase broadband installation throughout the region to improve communication and access to outside resources and markets.

4 Opportunities and Constraints

4.1 Opportunities

1. Overall beauty of and quality of life in the region is attractive to residents and business.
2. Proximity to Canada, specifically Montreal.
3. Large availability of recreational systems (i.e., Northville-Placid Trail, Great Escape, Wild Center, Champlain, etc.).
4. Demographics: Fort Drum recruits (and retirees) use the area for hunting and fishing as well as the shops, restaurants, and hotels. Connection between the “ruggedness” and outdoor activities with the similar interests of recruits.
5. Possibility that there are marketable amounts of rare earth metals in the region.
6. Attractive to non-resource consuming businesses (i.e., biotechnology companies).
7. Potential for a local economy based on an Adirondack brand rooted in responsible stewardship of the land.
8. Renewable energy generation potential, e.g., solar panels can be installed at former landfill sites or transfer stations; digesters can be installed at former landfill sites or transfer stations.

4.2 Constraints

1. Regional airport is small and not easily accessed.
2. No single location (website or resource) that captures all the wonderful things the region has to offer. It is hard to search for or identify places to go. Broadband access is limited.
3. Lending difficulties because rural area and location in the Adirondack Park makes bank loans a high risk.
4. Regulatory constraints, both real and perceived, including zoning and Adirondack Park.
5. Difficulty of starting conversations between industries and cities.
6. Lack of interstate access across the North, but construction, expansion, or extension of these routes may destroy communities by diminishing traffic through smaller towns.
7. Rail access is limited and it is cost-prohibitive to build commuter rails.

5 Framing Statement

Note: These statements overlap very closely with statements within other Focus Areas. This is positive, as members see that other more sustainability related concepts do have a direct link to economic development. This will be important as we define planning statements and make project determinations.

The North Country Homegrown Sustainability Plan shall consider the following strategies and practices:

Waste and Water

1. Promote source reduction through purchasing (consumer, businesses and government) from manufacturers that have waste reduction policies in place. Another way to promote reduction is pay per pound waste removal.
2. Explore ways to attract and retain recycling industries or recycled content-based products in the region to support recycling and create jobs and revenue as well as find ways to upgrade and maximize usage and potential of recycling and recycling programs.
3. Explore approaches to encourage expansion of the waste-to-energy sector in the region.
4. Evaluate options for biological waste (such as food oils) collection for use as biofuels.
5. Discuss relationship between job creation via recycling and the creation of waste-related commodities/products (i.e., compost, recycled materials, energy, etc.).
6. Evaluate ways to use wastes as an energy form (i.e., methane from landfills).

7. Secure funding to push forward existing plans for water treatment facilities.
8. Prevent the construction of new housing/infrastructure. Instead, emphasize the benefits of rehabilitation and maintenance up to a maximum before approving new builds.
9. Locate new utilities and infrastructure in targeted areas where they will enhance economic development.
10. Determine long-term economic benefits of providing water management infrastructure for priority growth areas, giving consideration to modernizing water fixtures and refurbishing existing housing stock plumbing systems; improving storm water run-off quality and quantity, implementing water conservation programs, and preserving and improving watershed quality.
11. Find ways to get state aid and support for improving water quality.
12. Consider the possibilities of treating waste water from hydraulic fracturing in the Southern Tier.

Land Use and Livable Communities

1. Determine long-term economic benefits of implementing smart growth principles defined in the land use and livable communities focus area (locating priority growth areas near existing development, encouraging Main Street development programs).
2. Define and expand regional and international business trading options.
3. Determine how to capitalize on the currently expanding New York State investments such as biotechnology clusters, etc.
4. Explore options for educating the public on sustainable land use planning using planning staff as educators to aid in the public's reception of change, and in turn establish a strong sense of ownership of planning in individual communities and the North Country as a whole.

Evaluate the importance of culture and arts (i.e., local theaters are closing because they cannot afford to update to digital).

Working Landscapes: Agriculture, Forest Resources, Recreation

1. Strengthen the economic viability of agricultural and forestry enterprises and communities that are supported by those enterprises. Identify revenue benefits of strengthening working farms within the region. Encourage support programs and resources to increase revenue of small-scale farming operations and foster the development of new farmers.

2. Incentivize food manufacturing firms to locate and/or expand in the North Country so that the majority of food and dairy products are processed and distributed within the region instead of being exported:
 - i. Encourage sustainable food production and distribution methods (cross reference with waste and energy opportunities).
 - ii. Identify the economic benefits of distributing food directly within the region.
 - iii. Promote local food, not necessarily organic, as an economic driver for all parts in the process, growing, processing, distribution, sales, etc.
 - iv. Find funding for the food distribution model.
 - v. Encourage the region's farming industry to continue to maximize direct and wholesale marketing to local consumers, institutions, and businesses. Foster programs that incentivize farms within the region to direct-market and sell wholesale. Identify the economic benefits of direct-sale and wholesale methods.
3. Encourage eco-and agri-tourism programs in the region that provide positive economic development.
4. Continue to promote export of forest products both in and outside the region. However, encourage emission reduction methods for the region's exported forest product and increase awareness of Forest Stewardship Council (FSC certification) and the access it can provide to new markets including highly environmentally sensitive markets.
5. Capitalize on the North Country's natural capital such as the 1000 Islands/St. Lawrence River, Lake Champlain, Tug Hill Plateau, and the Adirondack Park to promote low- impact recreation and eco-tourism opportunities. Identify potential economic development benefits.
6. Address food desert (lack of healthy, affordable food) issues in the North Country.
7. Incorporate local industry in the planning process (i.e., Stewarts Shops, Empire State Forest Products Association, local Cornell Cooperative Extension, etc.).
8. Explore how APA-zoned industrial areas can be developed. Barton Mines is the single largest site in the Park.
9. Using Canada as a model, explore growing season extensions, e.g., greenhouses.

Energy

1. Promote the North Country's effort to become the greenest economy in the state by becoming a center of growth for renewables and a net exporter of energy.
2. Determine economic development benefits associated with renewable energy development within the region, both as an exporter and user of the energy by North Country residents.

3. Promote energy-efficiency programs and retrofits and identify related economic development benefits.
4. Identify economic development benefits associated with developing the power transmission system and potential smart grid upgrades within the North Country region.
5. Establish specific energy goals over time and encourage community net metering.
6. Identify industries that can use greener power.

Transportation

1. Encourage rail and high-speed rail infrastructure to bring economic development to the North Country through construction and maintenance, high technology jobs, access to the region, and tourism.
2. Identify opportunities and strategies that directly support and enhance economic development, especially small business growth, through increased use of rail and waterways to transport goods and people.
3. Encourage developing transportation infrastructure such as public transit, sustainable fuel sources etc., that foster economic development and community connectivity.
4. Encourage development of high speed rail and CSX rail infrastructure and identify related economic development benefits.
5. Identify the economic development benefits associated with improving connections with Canada, developing transportation manufacturing, and improving regional airport infrastructure while also incorporating sustainability initiatives.
6. Broadband internet may go here best as a mechanism for transporting information.

Climate Adaptation

Overarching Economic Development Considerations

The plan shall consider strategies and practices that include the following:

1. Increasing job growth in the North Country region through the implementation of sustainability strategies defined in all focus areas. Identify the sectors that will experience increased job growth.

2. Increasing the business start-up rate in the region by implementing sustainability strategies defined in all focus areas. Identify the sectors that will experience an increase in small-business and other business start-ups, including relocations to the region.
3. Increasing the ratio of tax-base property to vacant property in the region by reusing existing buildings, participating in Main Street redevelopment programs, locating priority growth areas according to smart growth principles etc.
4. Increasing regional tourism revenue through the creation of eco-tourism and agri-tourism opportunities.
5. Increasing the number of jobs that are considered “family sustaining jobs” and provide a living wage through the implementation of sustainability strategies defined in all focus areas. Identify the sectors that will experience an increase of “family sustaining jobs.”

Governance

1. Determine local or state legal, permitting, or licensing constraints that limit the expansion of specific business opportunities by category (e.g., agriculture – local sales, ordinances on milling of grains, a processing technique that requires resource to be exported and re-imported). Outline possible solutions for research.
2. Determine ways to get county, regional, or state aid for the expansion and maintenance of infrastructure needs, including, but not limited to, rail services, broadband access, water and wastewater utilities, etc.
3. Achieve support for community net metering or monitoring of energy consumption. Develop ways of “showing” communities how they can save (various studies show this to be true). Community by community mapping can demonstrate how using green energy and/or energy consumption can be successful. Education can allow people to take more ownership in their personal usage

Strategies, Topics, and Practices Not Included

The plan will not consider strategies and practices that address economic development that primarily relates to resources that are addressed in other focus areas (e.g., discussions related to development of alternative energy transportation are presented under the transportation focus area rather than the energy focus area; discussions in the context of energy used in waste management are presented under the waste management focus area rather than under the energy focus area).

6 Identified Connections

The North Country Homegrown Sustainability Plan will be structured to increase job growth and resilience of existing businesses and the business start-up and success rate in the North Country region through the implementation of sustainability strategies. This will be accomplished through the combined goals of all the focus areas. The economic development focus area goals and indicators are deeply intertwined with most of the other defined focus areas because of the comprehensive nature of the economic development plans, strengths, and goals. Economic development and other focus areas tie together (see Section 5 above, economic development framing statement) in the following ways:

Energy/Waste/Water

- (1) Promote source reduction, water conservation, and energy-efficiency programs.

Energy/Waste

- (1) Encourage expansion of and support job creation for waste-to-energy and options for waste biofuels.

Energy

- (1) Become a center of growth for renewables and a net exporter of energy.
- (2) Determine economic development benefits associated with renewable energy development within the region.
- (3) Identify economic development benefits associated with developing the power transmission system and potential smart grid upgrades within the North Country region.

Waste

- (1) Encourage expansion of and support job creation for recycling and reuse programs.

Water

- (1) Consider the possibilities of treating wastewater from hydraulic fracturing in the Southern Tier.
- (2) Improve water quality in general and preserve/improve watershed quality.

Land Use and Livable Communities/Water

- (1) Determine long-term economic and other benefits of providing water management infrastructure upgrades and modernization.

Land Use and Livable Communities

- (1) Using smart growth principles, emphasize the economic benefits of infrastructure upgrades before approving new builds and identify locations where utility or infrastructure expansion could enhance economic development.
- (2) Educate the public on sustainable planning to promote local ownership of facilities. (3) Evaluate the importance of culture and arts (i.e., local theaters are closing because they cannot afford to update to digital).
- (4) Expand broadband and cell phone connections.

Working Landscapes

(1) Capitalize on the North Country's natural capital to increase regional tourism revenue by promoting low impact recreation, eco-tourism, and agri-tourism opportunities. (2) Identify the economic benefits of sustainable food production and distribution within the region, and distributing food directly.

(3) Promote local food, not necessarily organic, as an economic driver for all parts in the process, growing, processing, distribution, sales, etc.

(4) Incorporate local industry in the planning process (i.e., Stewarts Shops, Empire State Forest Products Association, local Cornell Cooperative Extension, etc.).

Working Landscapes/Energy

(1) Encourage emission-reduction methods for the region's exported forest product.

(2) Increase awareness of Forest Stewardship Council (FSC certification) and the access it can provide to new markets including highly environmentally sensitive markets.

Transportation

(1) Encourage rail and high-speed rail infrastructure, waterway transportation, and airport infrastructure improvement, while incorporating sustainability initiatives, to bring economic development to the North Country through construction and maintenance, high technology jobs, access to the region, and tourism.

(2) Encourage developing transportation infrastructure, such as public transit, sustainable fuel sources etc., that foster economic development and community connectivity.

Governance

(1) Determine possible solutions for local or state legal, permitting, or licensing constraints that limit the expansion of business opportunities.

(2) Determine ways to get county, regional, or state aid for the expansion and maintenance of infrastructure needs, including, but not limited to, rail services, broadband access, water and wastewater utilities, etc.

7 Research and Data Sources

Short statements on the primary resources we find.

8 Important Projects

Short statements on the primary projects we find.

9 Identified Case Studies

If anyone notes a project that could be a case study, let us and Jennifer Perry at ANCA know.

**APPENDIX III-B: Working group meeting schedule/format-Working Group Reports-
Livable Communities and Land Use**

Cleaner, Greener Communities Grant Program

DRAFT for Review by Working Group

Livable Communities and Land Use

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 - Governance – identified issues for this subsection
 - Climate Adaptation – identified issues for this subsection
 - Strategies, Topics and Practices Not Included – if needed, noting items which are not included.

1 Introduction

This document is the first of several summaries of key discussion points raised during the deliberations of the livable communities and land uses working group to help structure the livable and land uses component of the North Country Homegrown Sustainability Plan (Plan). As a summary of the discussion at the working group meeting July 11, it is not intended to be a report created by the group, nor is it a deliverable from the group. Rather, this and any following summaries are to be used to measure ongoing progress and to stimulate further discussion within the livable communities and land uses working group concerning its eventual input to the Sustainability Plan.

The Plan is being developed under a New York State Energy Research and Development Authority (NYSERDA) grant as part of the Cleaner, Greener Communities Grant Program. The North Country, consisting of Jefferson, Clinton, Hamilton, Essex, St. Lawrence, Lewis, and Franklin counties, is one of 10 regions eligible for the grant. The North Country has retained a team consisting of Ecology and Environment, Inc. (E & E) and the Adirondack North Country Association (ANCA) to support the process. The livable communities and land uses working group is one of six working groups meeting concurrently to help define needs and develop the Plan.

For this initial summary of discussion points, each working group has developed its own format and approach for presenting information. Information will continue to be revised and refined during the discussion process. During final preparation of the sustainability plan it is anticipated that a single report format will be used for all Plan sections.

2 Definition of the Focus Area

The planning team is addressing land-use planning as it relates to sustainable development and smart growth and improvement, both in location-efficient infrastructure and the economy and the creation and preservation of livable communities. Based on natural resource mapping, existing infrastructure and the North Country's regional economic development council's (REDC) strategic plan, the planning team shall identify appropriate guidelines for future development of and within existing urban and rural communities.

Also, the plan shall identify and promote guidelines and support priority revitalization areas in the North Country context that facilitate targeted, sustained growth in location-efficient, developed areas with increased mobility options. The planning team shall consider strategies that either encourage implementation of existing comprehensive zoning plans or promote adoption of updated or new local comprehensive zoning plans and infrastructure investment to support comprehensive land-use development; encourage the new construction and redevelopment of existing housing that is location-efficient and provides the necessary infrastructure to increase access to employment centers and transportation options; stimulate investment in mixed-use development and land recycling in existing communities; protect natural ecosystems; and prevent unworkable use of natural resources.

Strategies shall be addressed for the North Country’s small cities and rural communities to use land efficiently and sustainably while providing local economic growth, employment, and quality of life for their residents. Emphasis will be placed on recirculating resources (natural and capital) within the North Country region.

The Livable Communities and Land Use implementation strategy will be carefully coordinated with the transportation, working lands, and economic development focus area plans.

3 Goals of the Sustainability Plan

1. Focus revitalization on existing main streets, downtown areas, and existing sites with infrastructure to reduce and prevent sprawl.
2. Enhance local building codes and update comprehensive plans to include energy efficiency, allowances for renewable technologies, and mixed-use zoning or the use of commercial overlays).
3. Create healthy communities by improving public health and occupational health and safety.
4. Support sustainability programs/demonstration projects through local schools, which are often the largest building in a community. Schools can be used to encourage education on sustainability as well as sites for pilot programs such as biomass heating.
5. Conserve North Country’s natural capital such as forest and water resources by using available fallow agricultural land before using greenfield land.
6. Seek opportunities for shared transit and/or transit resources between counties and regions.

Working Group Note: Growth for the sake of growth is not what the planning team is looking for. The focus is to create local jobs and create a supportive local economy where local dollars are not exported, in part by using the natural and human capital of the region effectively and comprehensively.

4 Opportunities and Constraints

| OPPORTUNITIES | CONSTRAINTS |
|---|--|
| <u>Land Use Pattern/Code</u> | |
| Code enforcement staff can have greater authority and can use this authority to influence their roles on codes and bring them up to date. | Outdated zoning plans, little money for updating. Need to set clear goals in order to implement effective zoning changes. Code enforcement staff are not really empowered to enforce the energy code. |
| Return to early community design elements: early housing stock was solid, focused on hamlet/village life; beautiful buildings need to be | Tax-structure creates a double taxation environment, which is a disincentive to live in the village: people do not want to pay village and |

| | |
|---|---|
| <p>revitalized.</p> <p>Well-cared-for original homes are “tight” and low cost. Promote this as an asset. Reuse, rehab of beautiful old buildings that are being left to fall into disrepair.</p> | <p>town taxes, so they move out of the village, creating sprawl.</p> <p>This situation contributes to sprawl by effectively shifting growth outside of hamlets/villages. Taxes currently incentive sprawl: Adapt tax structures limit affordability for people to live within hamlets. For example, in tri lakes if you don’t live in village you pay less tax.</p> |
| <p>Return to mixed-use zoning to improve walkability and encourage business in residential areas; opportunities to incorporate urban agriculture (e.g., allowing chickens to be kept in the villages).</p> | <p>The distances between communities; rural roads negatively affect countryside because too much fuel is used.</p> <p>Lack of workable transportation, trails, bike lanes, opportunities for transit other than cars.</p> |
| | <p>In some instances, people believe that behavior change is required of individual citizens to embrace these changes, Some will love it, others will hate it, regardless of the idea.</p> |
| <p><u>Energy</u></p> | |
| <p>Huge amount of open space to use for projects available (appropriate locations, renewable energy installations, etc). Community-based renewable energy opportunities (solar panels on closed dumps).</p> | <p>Regulatory hurdles, challenges of common ownership: who owns what? who is responsible for maintenance, etc.</p> |
| <p>Community solar in one location, people who live in forested communities can lease a few panels and gain benefits of solar power</p> | <p>BPI training necessary to energy efficiency projects. Bottleneck in accreditation (NYSERDA green jobs for NY). In general, training for contractors is a challenge with long distances for travel and time involved.</p> |
| <p>Consider incentives to help people avoid upfront costs associated with sustainable long-term investments.</p> | |
| <p><u>Building and Development</u></p> | |
| <p>Mandate more durable buildings</p> | <p>People don’t have disposable income and are investing in cheaper, short-term housing and investment opportunities (not sustainable).</p> |
| <p>Develop existing infrastructure before building new.</p> | <p>Limited life cycle thinking: new construction looks at upfront costs instead of long-term life cycle costs; restructuring of financing is needed.</p> |

| <u>Tourism/Agriculture</u> | |
|---|---|
| Develop community place and pride (attracts tourism and investment). | Lack of education on how to make different communities known and accessible to tourists. |
| Tourism is an opportunity in some areas (not typical to all). Lots of community spirit, identity, which is intangible but attracts visitors. | Teaching students the possibilities of the region, how to use the resources available. |
| Scenic Byway development. | |
| Promote a cultural perception change/create unique cultural centers for each area. | Limited advertisement of tourist opportunities. |
| Community Garden Development (check out Seattle Tithe). | |
| Think of NC as an interconnected region...St. Lawrence and Champlain Valleys as food baskets to feed the rest of the region. (When trains to Midwest opened, this area died). | |
| Need to promote agro-tourism and heritage tourism. Cider tours. | |
| Develop agri-tourism, ecotourism and cultural tourism: Region has the largest number of dairy producers in the U.S. and a large percentage of organic producers. How to incorporate local farmstands, orchards, etc. into tourism and economy (like Quebec has). Quebec implements better zoning, maintain farms through a quota system so farms are more valuable. | |
| <u>Infrastructure</u> | |
| Complete streets (narrowing streets, encouraging pedestrian and bike traffic). Opportunity for engagement with NYS agencies to function with local interests. | DOT policies for the north of Blue Line (the Adirondack Park boundary) are incompatible with local character. Policies focus on moving traffic, so at every opportunity they make their roads as wide as possible. This creates bottlenecks where roads change widths and confusing for driving. DOT creates a policy that makes traffic move too fast through villages, removes parking from sides of roads, and destroys downtowns. The (DOT) refused to plant native trees and instead planted invasive species. |
| | Loss of countryside due to infrastructure (wide |

| | |
|--|--|
| | roadways). |
| <p>Broadband – create industry without local infrastructure. Create a knowledge economy. State has plans to fix broadband issues soon. Broadband conquers distance, brings people to more year-round communities.</p> <p>Seasonal residents want broadband, added value for hotels, etc. Also helps people to telecommute, keep communities alive when local jobs are not there.</p> <p>Broadband development (creates jobs, provides high tech connection, encourages influx of professionals into area).</p> | |
| FCC is subsidizing rural broadband instead of rural telecom. Big change and means significant broadband will come. NYS budget allocated \$25 miloion in broadband this year. | |
| Federal government to change subsidies to phone to include broadband. | |
| <u>Other</u> | |
| Community resilience-importing new brain power/diversity etc. | Cultural climate reacting to “top down” approaches. The North Country needs to be careful to not fall into that ourselves by making all of these recommendations. Starting out as homegrown needs to be a key to keeping it coming from the bottom up. But have to watch out for “state-wide” process. |
| Create local investment opportunities. | Lack of identity in some communities (how to create this). |

5 Framing Statement(s)

The plan shall consider the following strategies and practices:

Promote Priority Revitalization Areas/Locations

- 1) Develop guidelines for revitalization and, if appropriate, future growth, and identify potential priority areas in light of the following:
 - Existing development
 - Existing transportation infrastructure (automobile, bicycle, and transit) or the ability to support inter-modal/multi-modal transportation options
 - Local employment centers
 - Proximity to educational centers (10 institutions)
 - Proximity to Fort Drum
 - Existing Main Street Redevelopment Programs (or those that have the potential to support local land use improvements, building reinvestment and infrastructure support.
 - Other infrastructure: broadband
 - Airport improvements, transportation equipment manufacturing, foster technology clusters
 - Opportunities for tourism
 - Public health
 -
- 2) Priority revitalization locations should include and support the development of:
 - Mixed use development (housing with retail, retail with employment)
 - Sidewalks and bicycle paths
 - Arts and cultural institutions
 - Parks and open space
 - Foster research and entrepreneurial activities
 - Living-wage jobs with local businesses
 - On-site infrastructure (such as storm water treatment)
- 3) Targeting Priority Revitalization Locations will:
 - Maintain efficient use of land for working lands and natural resources and discourage sprawl
 - Protect natural ecosystems

Zoning Standards/Land Management

- 1) Identify zoning issues that encourage urban sprawl or uncontrolled commercial development along arterIALIZED roads and provide alternatives for consideration
- 2) Identify inclusionary zoning to address affordability of housing in livable communities
- 3) Encourage land use designations and permitting processes that support the growing clean energy industry such as wind, solar, low-impact hydropower, and biomass
- 4) Support long-standing agricultural businesses in the North Country.

5) Promote land management practices that correspond and promote local and sustainable farming practices and sustainable food production for a regional food economy

6) Promote land use designations that enhance opportunities for the North Country's tourism industry throughout the region while maintaining the existing character of the area

○ Tourism opportunity areas should reflect existing capacity, local assets, and *opportunities for* increased capacity for necessary infrastructure (e.g. transportation connections etc).

7) Draft guidelines for rural and urban land management

8) Promote land use designations and sustainable management practices that preserve the North Country's natural capital such as forests, mountains, water features, and other natural resources throughout the region. Capitalize on associated low impact recreation and eco-tourism opportunities

9) Develop programs to support local zoning boards and county government to developing comprehensive land use plans

10) Promote land management practices that preserve and enhance the 10 designated scenic byways in the North Country

11) Seek ways to promote zoning and land management practices that incorporate sustainable storm water management within local communities

12) Support sustainable land management practices and associated educational programs that prevent the spread of invasive species

Energy Conservation

1) Foster local land management programs and incentives that promote and support renovations of the existing housing through green building practices (ex. increase energy efficiency)

2) Encourage green building practices for all new construction within the region

Infrastructure

1) Identify ROWs corridors and promote land use easements to develop transmission networks that can link regional clean energy sources to the grid

Other

1) Address the cultural heritage of the region and identify indicators/benchmarks for measuring progress

○ Consider each area's unique cultural and natural heritages as a touchstone

- 2) Address the connection between all aspects of sustainability: environmental, equity, and economic

- 3) Create a supportive atmosphere where residents are community-minded and feel invested in their own towns and communities. People who feel invested in their community are more caring of neighbors, support community efforts, and the community resiliency of the region grows

- 4) Regarding tourism, livable housing needs to be considered

- 5) Community resiliency needs to be factored in

- 6) Energy efficiency issues should be included: in reference to upgrading existing housing stock (are of potential overlap)

6 Strategies, Topics, and Practices Not Included

7 Governance

[PLACEHOLDER]

8 Climate Adaptation

[PLACEHOLDER]

9 Identified Connections

Notes on Indicators per WG#1: Introduction

- *Include/integrate health as an indicator*
- *Healthy/quality jobs are important, not just any job*
- *From Dave Crandall: some measure of a region's cultural/natural heritage preservation*

10 Research and Data Sources

11 Important Projects

- Evaluate opportunities to provide reduced or expedited permit fees for buildings that exceed minimum energy standards
- Create a template of policy or code language addressing transfer of development rights and/or infrastructure investments in areas of existing development.
- Develop programs to support local zoning boards and county government to developing comprehensive land use plans.

12 Identified Case Studies

- Rural Broadband Subsidies: currently installing 260+ homes a month in North Country to broadband. People who lost their jobs became telecommuters because of broadband access.
- Saranac Lake: has had good leadership and forward thinking which has led to the creation of a livable community (high-tech, culture etc.)

Other External Resources for national case studies:

- *Institute for Local Self-Reliance*
- *Strong Towns*
- *EPA Smart Growth for Rural Communities Documents*
- *“Save our Lands, Save our Towns”, Hylton*
- *Better Models for Development in Pennsylvania: Ideas for Creating More Livable Prosperous Communities, Edward McMahon and Shelly S. Mastran*
- *National Main Street Center*

**APPENDIX III-B: Working group meeting schedule/format-Working Group Reports-
Transportation**

Cleaner, Greener Communities Grant Program

DRAFT for Review by Working Group

Transportation

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1. Introduction

This document is the first of several summaries of key discussion points raised during the deliberations of the transportation working group to help structure the transportation management component of the North Country Homegrown Sustainability Plan (Plan). As a summary of the discussion at the transportation working group meeting July 16, it is not intended to be a report created by the group, nor is it a deliverable from the group. Rather, this and any following summaries are to be used to measure ongoing progress and to stimulate further discussion within the transportation working group concerning its eventual input to the Sustainability Plan.

The Plan is being developed under a New York State Energy Research and Development Authority (NYSERDA) Grant as part of the Cleaner, Greener Communities Grant Program. The North Country, consisting of Jefferson, Clinton, Hamilton, Essex, St. Lawrence, Lewis, and Franklin counties, is one of 10 regions eligible for the grant. The North Country has retained a team consisting of Ecology and Environment, Inc. (E & E) and the Adirondack North Country Association (ANCA) to support the process. The transportation group is one of six working groups meeting concurrently to help define needs and develop the Plan.

For this initial summary of discussion points, each working group has developed its own format and approach for presenting information. Information will continue to be revised and refined during the discussion process. During final preparation of the sustainability plan it is anticipated that a single report format will be used for all Plan sections.

2. Definition of the Focus Area

The North Country Homegrown Sustainability Plan presents ideas on how to preserve and improve the existing, local transportation network and its connections within New York State and to Canada by providing a more efficient and expanded system operation, the infrastructure to fuel a larger fleet of alternative fuel vehicles, and enhanced multi-modal choices for North Country residents, businesses, and governments.

Improvements in infrastructure for different modes of transportation that provide modal choice for inhabitants such as walking and bicycling (both in-network and pathways), ridesharing, complete streets policies, and public transportation (including bus service and targeted shuttle services) should be considered. Some transportation options may be more viable within specific local boundaries; however, improvements in some systems require removing legal or organizational boundaries and finding more regional solutions.

The planning team identified programs to encourage more efficient transportation modes, fuels, and vehicles and investments in street, rail, highway, transit, and fueling infrastructure that will contribute to regional economic stability and growth, the quality of community life, reduced governmental costs, and improved environmental sustainability.

Comment: To date, there has been little discussion on multi-modal transportation options for the more rural areas of the region, geographic areas between settlements.

3. Goals of the Sustainability Plan

Sustainable transportation goals evolved from the framing statements noted below. The transportation working group proposed/developed the following goals:

1. Improve and create additional bike and pedestrian networks that support and connect communities.
2. Improve and expand regional transit and inter-county connections, focusing on servicing regional “commuter pockets” to reduce emissions from vehicles and vehicle miles travelled (VMT).
3. Improve access into and out of the region, including enhancing rail, bus, and air connections, through expansion of routes, frequency of service, and improved facilities.
4. Promote ridesharing options and other systems for reducing VMT for regional events such as fairs, horse shows, and athletic events.

Other Goals

These three other goals were not included but were expressed as possibly important, based on comments and suggestions from working group members and a review of state policy. The working groups may want to engage in further discussion on these:

1. Support policy and planning efforts to improve freight rail infrastructure/movement in/out and through the North Country region.
2. Improve coordination in the road infrastructure planning process to balance local, county, and regional priorities with state requirements.

Notes: Issue discussed when talking about Malone where there's a perceived tension between improving traffic flow through town and the impact it has on pedestrian flows in downtown, impact on parking and hurting retail activity. A related goal might say something along the lines of improving coordination in the transportation (infrastructure?) planning process to balance local, county and regional priorities.

3. Increase the use of alternative fuels through incremental investments in alternative fuel infrastructure and vehicles.

Notes: NYSEERDA's definition mentions alternative fuels multiple times, but the North Country region has not decided to set a goal around it. Should we discuss the use of alternative fuels for the region? residential or private or public fleets? Do we have a sense for whether municipal fleets already have compressed natural gas (CNG) or electric vehicles or might want to switch more vehicles to alternative fuels? It is understood that there is not a lot of installed natural gas in the region, which may limit Usefulness.

Opportunities / Constraints

| Opportunities | Constraints |
|---|---|
| Mobility and Travel Options | |
| Apply sophisticated communication tools to support transit. | Information - Tourists need to be made aware of transport options. |
| Coordinate transit services and routes with universities and institutions such as hospitals (subsidize initially to encourage ridership but also increase ridership so that the system can move away from subsidies). | Public transportation schedules don't line up with individual work schedules; there are many diverse work needs. Not enough time options for people; convenience is an important factor. |
| Inventory of vacant buildings (yards) in proximity to existing rail and truck routes as opportunities for businesses that might need storage and (rail) shipping capacity, e.g., food processing. | |
| Ability to transfer from county to county bus lines. | |
| Improve communication and education to encourage rideshare (online). Advertise and promote transportation networks – tourists seem to use more public transportation, locals not as much. New transportation options such as ridesharing can support the opportunity for local residents to explore their own regions more completely and increase local commerce and recreational opportunities. North Country towns and assets through rideshare and transportation networks. | Rideshare knowledge needs to be developed. (People are not communicating; are you both on the same route? Can you carpool?). |
| Promotion of long- and short-term rental car options to support people who decide to reduce their car ownership levels. Examples such as Zipcar.com or ECar. | |
| Expand use of school buses for “other than school” transit options. Use existing resource more effectively. Temporary shift of equipment. Charter trip could be an option that is currently not allowed. Department of Education and DMV need to be involved in these decisions. | Dept. of Education issues/Parents don't necessarily want the public riding with their children on the school bus. Each college has different transportation plans with limited coordination between institutions. |
| Inventory available transit and village transportation options (to help to identify collaborative options). | Parents may not want to see children on public transit, as it is not something they are used to seeing – expect separate services. Need to know county inventory such as routes and schedules. |
| Rail-to- trail corridor between Lake Placid and Tupper Lake. | |

| Opportunities | Constraints |
|---|---|
| Add bike path alongside Canton-Potsdam rail line. Would need barriers (operating line, landowners don't want people behind their houses). | Push back from property owners against cyclists |
| Install bike racks on all buses. | |
| Bike cars on trains | |
| | There are great distances between locations where people need to travel. |
| | Weather can greatly impact travel. |
| Rail | |
| Rail connection between Tri-Lakes towns (Tupper Lake, Saranac Lake, and Lake Placid. Others spoke of connections along same line to the south as far as Old Forge, Herkimer County). | |
| Combine electric/broadband infrastructure with existing rail corridors (e.g., Lake Placid-Raybrook) – in general, use corridors for installation of infrastructure. | |
| Connectivity | |
| Connect Franklin County to the Lake Placid conference center (transit/transportation options). | Other counties cannot complete these types of connections. For example, Essex County cannot complete these types of connections due to current restraints – connecting Lake Placid to the Wild Center would not work. There are seasonal issues as well – there are no students in summer and in winter there are fewer tourists. |
| Coordinate with cultural institutions. | |
| Road and Other Infrastructure | |
| Interest in exploring best alternative to Rooftop highway issue-with an eye to preservation of communities along the route. There is an overlap between transportation network and available distribution capacity. | Main Streets are also state routes - coordination between DOT, villages and pedestrian needs. DOT maintains the state routes, may need to widen, etc. which is bad for downtown pedestrian traffic. Reroute state routes around towns and make the old routes town roads – this is expensive and can divert people away from businesses so there needs to be a balance. |
| Complete Streets Programs (seek more grants) add bike lanes as road improvements are occurring (ex/put a bike lane on Old Military Road in Lake Placid since it is being repaved). | Limited DOT resources to add bike lanes to existing improvements. |
| Rebuild village infrastructure-DOT-water/sewer. | |

| Opportunities | Constraints |
|--|--|
| Roads are in good repair and have enough capacity for vehicles travelling on them. | Complete Streets requires DOT to look at needs but does not provide what it takes to meet the needs (no extra funding necessarily). |
| Improve Route 11 as an alternative to new I-98. Consider bike and walking trails/paths – don't want to lose any existing trails/paths. | Conflicting interests/needs between village commercial interests which promote downtown character/quality and the local desire to move through downtowns quickly/move traffic quickly. |
| Use existing corridors, combine corridor uses (roads, power lines, fiber optics) instead of making new ones to reduce costs. | Regulatory hurdles-burying lines due to increased frequency of storms. |
| Governance | |
| Simplify authorizing approval and requirements among townships and with counties. | Operation authority only exists within the counties; the operating authority needs to be regional. Regional coordination of public transportation systems is currently difficult, must be inspected on a county basis. This limits ability to get from one town to another; cannot travel county to county now without transferring (e.g., LP to PBurgh) |
| Regional as opposed to county coordination (lump counties together in terms of regulations, have inter-county public transportation). | Low population density (ex/St. Lawrence County). Transportation systems are subsidized. Need to move away from that to make them sustainable. Not going to get enough people right now to do that. |
| Single point of transportation coordination. | Multiple regional routes with multiple schedules. |
| Overlay scenic byways information/places of interest into 511 database. | Road improvement issues – not always able to update for safety due to forest reserve, park issues, local pushback. |
| | |

4. Framing Statement

Miles Traveled by Road/Emissions Generated

1. Develop public transit options and community-based ridesharing systems that improve ability of people to travel together within and between towns while reducing vehicle miles traveled, improving community connectivity and supporting local and visitor access to open space and recreational resources, including promoting environmentally conscious tourist transportation such as bikes, electric cars, etc.
2. Encourage transportation decisions that support local food and energy production and minimize road travel. For example, situate local food processing near existing rail (e.g., abandoned RR yard issue) and inventory large commercial spaces that serve or could serve the food distribution network and connect to transportation systems.

3. Promote regional transportation planning.
4. Identify opportunities and strategies that directly support and enhance economic development, especially small business growth, through increased use of rail and waterways to transport goods and people.
5. Identify activities/areas where there is no practicable alternative to road transportation of people and goods and support prioritization for travel modes that utilize sustainable fuel sources and/or minimize trips.
6. Increase video conferencing, broadband, and remote working inventory/development in order to minimize travel for meetings, classes etc. (This is a good cross-task with the Economic Development Working Group)
7. Promote incrementally use of biodiesel, low-sulfur, electric vehicles, compressed natural gas, and other fuels and advanced technologies.

Rail Infrastructure

1. Support the development of high speed rail and/or incremental improvements to the Montreal-New York corridor, including collaboration with other regions in New York. Encourage the improvement of the Westport Station, increase frequency of stops, intermodal connections.
2. Actively advocate for continued federal and state investment to make incremental improvements along the North Country rail corridors (reduce delays, increase frequency of service, and reduce number of stops by making them optional).
3. Support state, federal, and private investment that is currently funding the rehabilitation of the CSX rail infrastructure from the Watertown area to Newton Falls and southern St. Lawrence County to support paper making and other economic opportunities in that part of the region.
4. Explore Adirondack Railway connection expansion between Tupper and Lake Placid, and Big Moose to Tupper.
5. Amtrak has only limited station stops that serve the North Country. Ensure stations are well served by connecting transit options, providing adequate parking, considering car rental services, maintaining facilities. Promote upgrades and alternatives to rail equipment such as hybrid locomotives and other new technology.
6. Enhance intermodal connections between trains and existing bus stations to create more rail flexibility.
7. Address affordability and marketing of public transportation in the North Country.
8. Combine rail and recreational opportunities by increasing awareness of connections and fostering multi-agency support (e.g., ride the train to cycling locations, connecting different campsites).
9. Explore potential for light rail in the North Country.

The Region's Partnership with Canada

1. Identify measures to optimize fluidity at commercial border crossings, especially Alexandria Bay, Ogdensburg, and Massena, including prioritization for travel modes that utilize public transit, sustainable fuel sources, and/or minimize trips, with a preference for infrastructure improvements that reflect sustainable development principles, e.g., green building.
2. Explore ways, including non-road options, to improve east-west connectivity between I-87 and I-81 corridors to support border crossings and improve connectivity between communities.

Transportation Manufacturing

Develop North Country as part of emerging green economy through its transit equipment manufacturing as a center of excellence for railcar and locomotives.

1. Use the North Country as a pilot program/laboratory for new technologies (e.g., where universities can study the progress of new technologies such as biodiesel/electric vehicles).
2. Provide ongoing support for regional transportation/transit equipment companies, equipment, and technological upgrades and workforce recruitment and training.
3. Attract sustainable transportation/transit equipment-related enterprises such as hybrid and alternative fuel vehicles and infrastructure upgrades (e.g., electric cars as part of ride-share programs, pedi-cabs etc.)
4. Work with region's congressional delegation to gain approval for a new federal transportation authorization bill that will support contract opportunities for North Country transportation equipment businesses.
5. Advocate for support from New York State and various transportation authorities to maximize federal and state transportation/transit equipment purchasing within the state and the North Country region.

Airports and Aviation

1. Develop and upgrade training and resources in support of aerospace and aviation sectors, including initiatives at the region's community colleges and aeronautical institutes and universities. Increase high-school and college student awareness of the job opportunities located at airports (e.g., mechanics, specialists, aviation training).
2. Attract additional investment in increased capacity for North Country regional airports near the border, especially Plattsburg International airport, capitalizing on pending investment of \$200 million for high-tech aircraft Maintenance, Repair and Overhaul (MRO) facility and Lake Clear airport.

3. Explore strategies to reduce energy consumption and greenhouse gas emissions associated with airport operations and utilize green building practices for airport facilities to help manage storm water runoff, reduce water and waste consumption, etc.
4. Support development of infrastructure around Plattsburgh and other regional airports (Watertown, Ogdensburg, and Massena) and within communities adjacent to Fort Drum, prioritizing proposals that promote sustainability, such as use of public transit, incorporation of renewable energy, etc.

Further Discussion: Air travel creates emission issues yet it is vital to economic development and could offset some VMTs by residents and visitors. How do we discuss these issues and frame actions that are environmentally friendly while supporting the local economy?

Pedestrian and Bike Mobility

1. Review existing data on railway rights-of-way (ROW) in the region and consider programs or projects that bring state, federal, and private funding for the eventual rehabilitation of ROWs. Discuss potential projects such as the Adirondack railroad from Remsen to Lake Placid and other opportunities along railways for rail operations that could be combined with or connected to recreational trail use.
2. Inventory rail ROWs. Consider abandoned railway ROWs for recreational purposes (e.g., develop a rails-to-trails program).

Governance

1. Identify regulatory obstacles to the extension of transit service between North Country counties such as requirements for multiple inspections and geographic boundaries of existing transit providers.

Climate Adaptation

1. Consider how transit and other service actions can be configured to support the needs of communities in the case of an emergency. Public transit may be able to provide resource support for weather-related events such as flooding.
2. Transportation infrastructure should consider the possibility of an increase in severe weather impacts on existing/proposed transportation systems and determine if current standards meet the needs of the region. The region may need to consider a change in guidelines to ensure that infrastructure protection is adequate for changing weather patterns to ensure long-term system reliability and effective weather-related incident response.

Strategies, Topics, and Practices Not Included

The plan will not consider strategies and practices that will address transportation where it primarily relates to resources that are addressed in other focus areas (e.g., discussions related to development of alternative energy transportation are presented under the transportation focus area rather than under the energy focus area and discussions of energy used in waste management are presented under the waste management focus area rather than under the energy focus area).

Identified Connections

Increase video conferencing, broadband, and remote working inventory/development in order to minimize travel for meetings, classes etc. (This is a good cross-task with the economic development working group).

Research and Data Sources

Short statements about the primary projects we find.

Identified Case Studies

If anyone notes a project that could be a case study, let us and Jennifer Perry at Adirondack North County Association know.

**APPENDIX III-B: Working group meeting schedule/format-Working Group Reports-
Materials and Water Management**

Cleaner Greener Communities Grant Program

DRAFT for Review by Working Group

Water and Waste Management

Table of Contents

- Intro/Purpose/Background
- Definition – this is a definition of the Focus Area
- Goals – these are the goals developed by the Working Group
- Opportunities
- Constraints
- Framing Statements – these are statements that were used to help create goals and are meant to further clarify ideas, identify direction, to be used in developing targets, help brainstorm ideas for projects.
 - Governance – identified issues for this subsection
 - Climate Adaptation – identified issues for this subsection
 - Strategies, Topics and Practices Not Included – if needed, noting items which are not included.

1. Introduction

This document is the first of several summaries of key discussion points raised during the deliberations of the Water and Waste Working Group to help structure the water and waste management component of the North Country Homegrown Sustainability Plan (Plan). As a summary of the discussion of the Group meeting July 12, it is not intended to be a report created by the Group, nor is it a deliverable from the group. Rather, this and any following summaries are to be used to measure ongoing progress and to stimulate further discussion within the Group concerning its eventual input to the Plan.

The Plan is being developed under a New York State Energy Research and Development Authority (NYSERDA) Grant as part of the Cleaner, Greener Communities Grant Program. The North Country, consisting of Jefferson, Clinton, Hamilton, Essex, St. Lawrence, Lewis, and Franklin counties, is one of 10 regions eligible for the grant. The North Country has retained a team consisting of Ecology and Environment, Inc. (E & E) and the Adirondack North Country Association (ANCA) to support the process. The group is one of six working groups meeting concurrently to help define needs and develop the Plan.

For this initial summary of discussion points, each working group has developed its own format and approach for presenting information. Information will continue to be revised and refined during the discussion process. During final preparation of the sustainability plan it is anticipated that a single report format will be used for all Plan sections.

2. Definitions

2.1 Water

Water is considered one of the most valuable natural resources of the region. It provides ecosystem habitat and is used by many as a recreational resource, while being relied upon for drinking, agriculture, and by other industries. While the North Country is fortunate to have an abundance of water, this critical resource is becoming increasingly scarce in some areas of the United States. It is clear that in the future, this resource will only continue to gain in importance.

Water resources discussed here encompass all of the following types of water:

- Surface and groundwater sources
- Rainwater
- Waters used for recreation
- Water that provides ecological habitats

and uses:

- Potable water (municipal, well, surface, other)
- Wastewater (treated, septic with leachfield) and storm water (potentially contaminated rainwater)

- Water used in industry, including agricultural, forestry consumption or management, and hydro production (hydro-power).

The Group stated that the North Country Homegrown Sustainability Plan shall promote measures to protect and enhance water as a valued resource within the region. The Plan shall provide an evaluation of programs and practices that improve the sustainability of water infrastructure in the region. This includes energy efficiency and reduction of energy used in water production and treatment, greenhouse gas (GHG) emissions associated with potable water production and wastewater treatment, and the appropriate reuse of water.

The Plan shall support the sustainability of communities over the long-term. It shall discuss the impacts that future transportation and development infrastructure projects may have on water resources in the region. The Plan shall also evaluate methods to mitigate invasive species effects on water quality and habitats, and support resiliency to flooding.

The resulting water implementation strategy (WIS) will be carefully coordinated with the land use and livable communities, working landscapes, and transportation focus area plans. The WIS will document governance actions where appropriate.

2.2 Materials and Waste

Note: In order to create a more comprehensive planning language, the Group will begin using the word “material” in its research. This follows the language of NYSDEC’s Beyond Waste, which states that anything that does not end up in a landfill is a “material.” This also begins to address the comment that we need to move beyond waste and “change the concept of what we consider waste.”

The North Country Homegrown Sustainability Plan process shall evaluate typical materials and waste management practices throughout the region and determine strategies to reduce the waste produced and GHG emissions associated with materials and waste management. In parallel with the strategies identified in NYSDEC’s Beyond Waste Program, the Plan shall build upon best management practices already in place in some communities to bring them to scale for implementation throughout the region. The Plan is to evaluate ways to reduce the amount of waste that is currently landfilled or incinerated. This includes improvements to the collection of materials, materials separation, and strategies to increase the quantity of recycled materials.

Recyclable materials include organic (degradable) and inorganic materials (plastic, aluminum, glass, some construction and demolition wastes). While some organic materials (yard waste, compost, biosolids, forestry waste, food waste, and some construction and demolition wastes) may be recyclable, much of it is compostable. Composting is a more desirable outcome because it pulls this bulky, high-water content waste from the waste stream at an earlier time, before it requires much transportation. The Plan will develop strategies to encourage good material reuse practices and cultivate markets for recyclable and reusable materials. The plan will consider waste-to-energy opportunities, product stewardship, and the creation of markets for recycled and compostable materials.

The materials and waste implementation strategy will be carefully coordinated with the Working Landscapes and Economic Development focus area plans. The plan shall assess a representative set of local recycling policies and waste-reduction programs and use the Governance section of the plan to put forth possible solutions for review.

Discussion Topic: Incineration is a form of waste to energy and is seen by some as a renewable resource because waste continues to be available, even with reduction policies. What does the WG think about supporting or not supporting incineration?

3. Goals

The following are the defined goals of water resources and waste management, as defined by the Working Group:

1. Promote the conservation of water and reduction of solid waste generation.
2. Implement water management planning from a regional or watershed-level scale
3. Increase the percentage of waste recycled or reused within the region.
4. Maintain quality of natural water resources
5. Reduce infrastructure maintenance costs by implementing sustainable best management practices and improving energy efficiency
6. Incorporate strategies that create benefits and reduce the costs of providing water and waste services such as composting and anaerobic digestion to reduce the need for hauling and landfill fees

The following implementation strategies have been identified towards achieving the goals:

1. Upgrade and maintain existing facilities and infrastructure (prior to building new) (*through completing projects favoring energy savings, conservation, and sustainable initiatives*).
2. Reduce infrastructure maintenance costs (*by implementing sustainable best management practices and improving energy efficiency*).
3. Reduce capital and operational costs on communities (*Promote the conservation of water, and reduction of solid waste generation*).
4. Reduce the costs of providing water and waste services (*Incorporate strategies that create benefits and such as composting and anaerobic digestion*).
5. Reduce the need for hauling and landfill fees.
6. Replicate successful community recycling and waste reduction programs in surrounding areas (*by sharing program information*).
7. Cultivate markets for recyclable and reusable materials.

Discussion Note: Materials management seems a little underrepresented in the Goals. Discuss.

4. Opportunities (*notes*)

4.1 General

1. Open space is available to implement opportunities (coordinate with land use and livable communities).
2. Local colleges and universities can assist with planning, research, and technologies.
3. Case studies from Vermont (just across Lake Champlain) can show how they can be implemented in this region. Highlight successful programs to improve interest and attitudes towards change.
4. Integrate sustainability education into school systems. Students have the interest but need more guidance.
5. Region has good examples to compile sustainable best management practice guidance for both water and materials management. (Actual examples to be determined and collected.)
6. Evaluate financial incentives that may help the region achieve its water and materials management goals.

4.2 Water Resources

1. Implement sustainable best management practices for storm water to improve future waterfront development and allow incremental improvements to occur
2. Consider public health when promoting the sustainable management of public water systems
3. Look for specific opportunities to regionalize water infrastructure and distribution systems where it makes financial sense. Consolidation can be more cost-effective; however, implementation strategies may vary within the region.

4.3 Materials and Waste

Promote reuse or recycling by banning material identified as having a reuse or recycling value (such as a market) from landfill disposal.

1. Use material recycling and reuse opportunities to identify existing market opportunities, create new markets, and generate new jobs. Use Governance section to implement county or city level mandates to require three-stream recycling and higher rates of recycling of private haulers.
2. Educate communities about better disposal practices— identify and create alternatives, reduce burning barrels, private dumps, and waste buried by homeowners.
3. Incorporate work share programs for materials sorting and regulation enforcement.
4. Consider distributed materials management system infrastructure (example needed by working group).
5. Implement recycling, reuse and composting practices and initiatives in tourist areas; for example at rest areas. This will promote and support eco-tourism in the region.

5. Constraints

The working group identified several constraints on implementing a sustainable water resources policy:

5.1 General

1. Infrastructure in the region is fragmented, and it is difficult to overcome long distances.

2. Difficult to centralize facilities; the focus should be on locally distributed facilities across the region.
3. Attitude and resistance to change. A clear set of priorities needs to be developed so people understand what is important to each area. Preserving natural resources but also creating energy availability and improving job markets is important.
4. Communities lack the capital to implement improvement projects.
5. Ecology and geography can make it difficult to install water and waste management facilities and systems.
6. Population density is an obstacle. Low-density town centers and residents spread over large areas make systems and infrastructure more costly to start up and maintain.

5.2 Water

1. Water is one of the regions greatest resources but protective regulations also impose heavy constraints. Regulators need to understand how and where to incorporate green infrastructure.
2. Cost of water infrastructure maintenance is difficult to keep up with for many local governments.

5.3 Materials and Waste

1. Organic waste currently makes up 30% to 40% of the waste stream. This is a huge resource but not currently separated out. Green waste (yard waste) is another waste stream that could become an asset if properly managed.
2. Regulations prevent waste facilities in Adirondack Park. Waste must be transported outside the Park border.
3. Local laws could be used to mandate more effective recycling. Towns need to work together to discuss and share methods that work for them.
4. Local recycling and materials handling laws are not consistent.
5. For some counties, waste tonnage creates a significant revenue stream for the locale; reducing the waste stream impacts local revenues. Educate residents on materials management as a commodity increase.
6. Communities (and citizens) are not encouraged to recycle if they know materials are just combined into one stream at transfer stations.
7. Materials and waste collection mechanisms need updating in order for improvements to be implemented. Capital costs of split collection vehicles and waste processing facilities are an obstacle to implementation of projects.

6. Framing Statements

6.1 Water

The North Country Homegrown Sustainability Plan will consider strategies and practices in three focal areas of water management.

1. Water Conservation and Efficiency
 - a. Promote the conservation of water by implementing sustainable best management practices, which can reduce the cost of treatment and infrastructure maintenance, reduce energy consumption for water and wastewater treatment, and minimize impacts to surrounding water bodies (within context of existing standards, such as Energy Policy Act, Uniform Plumbing Code, AHSRAE 189).
 - i. Promote regional water conservation programs (e.g., municipal scale, housing, commercial, agriculture).
 - ii. Support leak detection programs for municipal water systems
 - iii. Implement universal metering for municipal water supply
 - iv. Promote programs that support and incentivize the refurbishment and modernization of water fixtures in residences and businesses to reduce water use in the region
 - v. Promote water use reduction for all new construction of homes and businesses through green building practices (inside the home and on-site)
 - vi. Encourage water use reduction through reuse and conservation on campuses, including dorms throughout the North Country. Consider district-scale solutions
 - vii. Where appropriate, encourage the use of tap water for drinking, rather than bottled water. (Opportunity to tie to green hospitality and meeting standards related to the tourism industry)
 - viii. Incentivize the reuses of water, especially rainwater for greywater reuse systems. (Need to clarify Working Group's interest in this: rainwater capture and reuse is one system, and capturing and using graywater is another system. Graywater use can be expensive and is most appropriate for commercial uses when water rates are high)
 - ix. Consider the appropriate reuses of wastewater (blackwater) and promote changes in permitting processes to encourage approved uses.
 - b. Implement energy-efficient retrofits for existing water and wastewater facilities, and private wells in order to reduce energy consumption and save operational costs.
 - i. Establish incentives and encourage the use of existing state funding that supports energy-efficient upgrades for water infrastructure such as equipment replacement programs and more efficient control systems.
 - ii. Support energy audits for water and wastewater treatment facilities.
 - iii. Encourage the use of renewable energy sources for water and wastewater facilities and distribution systems.
 - iv. Encourage natural treatment systems of waste water through constructed wetlands.
 - v. Support residential programs such as private well pump replacement to more energy efficient models. (consider pump energy uses vs. other home power systems)
 - vi. Promote reducing the carbon load per gallon through the minimization or offsetting the pumping power associated with the movement of water. Encourage design solutions and/or solar?? energy arrays at pumping stations.

- vii. Identify cost and energy efficient water management strategies to support targeted growth areas (growth areas will be identified by the land use and livable communities).
- viii. Identify cost and energy efficient water management strategies needed to support the growth of industries and facilities within the region including biotech clusters, health care centers, forestry, agriculture, and college campuses.

2. Storm Water Management

- a. Encourage storm water management best practices to reduce runoff and water quality impacts and reduce the volume of storm water sent to wastewater treatment facilities to eliminate any potential for combined sewer overflow in municipal areas.
 - i. Use green infrastructure to support the principles of low impact development (LID) that works to reduce storm water runoff resulting from impervious surfaces such as roadways, parking lots, and developed town centers.
 - ii. Incorporate LID practices such as buffers and bio-swales along the 10 designated scenic byways and areas adjacent to surface waters
 - iii. Promote separation of combined sewers to reduce storm overflow into waterways, and reduce storm flow to wastewater treatment facilities
 - iv. Promote the conservation of natural drainage corridors such as wetlands, ponds, and streams to allow the natural systems to convey, store, and filter storm water, allowing for resilience to flooding
 - v. Promote the development of alternatives to road salt.
 - vi. Promote education of low impact development techniques and the benefits of improving storm water quality and quantity within the North Country.
 - vii. Create demonstration projects to build awareness; partner with the 10 institutions of higher learning within the region to engage students and promote LID projects on campus and in the adjacent communities.
 - viii. Promote the reduction of water quality impacts along the St. Lawrence Seaway from cargo ships

3. Natural Water Quality

- a. Maintain the quality of natural water bodies in the region
 - i. Foster the development of programs that maintain or improve the watershed hydrology and water quality within the region's watersheds.
 - ii. Encourage educational programs that bring awareness to local watershed conservation and water quality issues.
 - iii. Promote programs that preserve or improve the water quality of natural water features and waterways within the North Country.
 - iv. Promote agribusiness/agricultural production processes that minimize impacts to watershed water quality.
 - v. Promote continued improvements in water quality by working to keep medications and other health-related products out of the water system.
 - vi. Improve aging sewers and septic systems serving second homes located on or near lakes and streams. Many of these homes were intended for part-time use and the systems have not been maintained.

- vii. Promote education and programs to reduce impacts of invasive species in the region's water bodies.
- viii. Encourage the establishment of septic system monitoring and routine maintenance to prevent impacts to water quality.

Governance (Water)

The North Country Homegrown Sustainability Plan shall consider strategies and practices that will:

1. Promote policies that will protect water from contamination, rather than focus on cleaning up contamination.
2. Promote water conservation and energy efficient practices for water infrastructure.
3. Evaluate possibility of compensation for damaged water resources from external industrial pollution. (Acid Rain)

Climate Adaptation (Water)

None at this time

Strategies, Topics and Practices Not Included (Water)

The plan will not consider strategies and practices that will address water management where it primarily relates to resources that are addressed in other focus areas (e.g., discussions related to development of alternative energy sources are presented under the Energy Focus Area; discussions in the context of energy used in waste management are presented under the Waste Management Focus Area rather than under the Energy Focus Area).

6.2 Materials and Waste

The North Country Homegrown Sustainability Plan shall consider strategies and practices in five focal areas of materials and waste management.

Source Reduction

1. Identify and encourage efforts that reduce solid waste generation, including education programs and commercial initiatives.
2. Promote source reduction through purchasing and product stewardship (consumer, businesses and government) from manufacturers that have waste reduction policies in place. Promote product stewardship through a life-cycle (cradle to cradle) program (e.g. New York State's e-waste program).
3. Encourage "closed system" thinking for all aspects of waste management.
4. Consider incorporating requirements for construction and demolition waste source reduction and recycling into the building permitting process.
5. Change perceptions of what is considered to be waste.

Recycling and Reuse

1. Consider mandatory recycling programs, incentives/fees and/or goals for government, residents and businesses that are practicable and feasible for implementation in the region. These may differ between rural, semi-urban, and urban areas.
2. Promote the concepts of reduction, recycling, and reuse to individuals, government, educational institutions, and businesses, including tourism and event-related enterprises.
3. Inventory regulations and rules to develop a series of best management practices for recycling and reuse.
4. Ensure recycling efforts are focused on materials that make up the greatest proportion of the waste-stream and provide the greatest opportunity to reduce solid waste at lowest cost, relative to other more challenging or less marketable materials. These may include aluminum, glass, paper, cardboard, and food waste.
5. Explore ways to attract and retain recycling industries in the region to support recycling and create jobs and revenue.
6. Investigate solutions to materials hauling issues such as distance.
7. Support infrastructure that improves the ability to sort recyclable and organic material from the waste stream.
8. Evaluate a three-stream (food, recyclables, waste) versus single stream material flow.

Organics Recycling (including composting) and Anaerobic Digestion

Explore individual, community, and region wide composting strategies and options

1. Develop and expand organic materials for non-food applications. Organic standards have opted not to include sewage sludge for food fertilizer based on concerns of heavy metals and pathogens. Assess the current use of sludge and possible expansion of using bio-solids as an agricultural, residential, and/or commercial fertilizer.
2. Support aerobic and anaerobic digestion endeavors.
3. Promote centralized composting at the county level for small towns.

Waste Combustion and Landfill

1. Promote waste disposal processes without impacting human health or air quality such as energy recovery and maximize waste diversion technologies.
2. Explore approaches to encourage expansion of the waste-to-energy sector in the region.
3. Evaluate options for bio-waste collection for use as biofuels.
4. Evaluate processes that produce energy for use in new local economies related to sustainability – i.e., reduce cost of heating buildings, agricultural greenhouses, etc.

Governance (Waste/Materials)

1. Determine local or state legal, permitting, or licensing constraints that limit the improvement of sustainable materials management practices. (i.e., installation of digesters). Outline possible solutions for research.
2. Identify and highlight best practices for improving human health in the region as well as general materials management best practices.

Climate Adaptation (Waste/Materials)

None at this time

Strategies, Topics, and Practices Not Included

The plan will not consider strategies and practices that will address waste management where it primarily relates to resources that are addressed in other focus areas (e.g., discussions related to development of alternative energy transportation are presented under the transportation focus area rather than the energy focus area; discussions in the context of energy used in waste management are presented under the waste management focus area rather than the energy focus area).

Identified Connections

Use the notes and your creative thinking to begin to tie some of the Groups ideas together, make notes. Once we all develop our own reports, we can share them and fill this section out more. Can be done as bullets or a table.

Research and Data Sources

Short statements on the primary resources we find.

Important Projects

Short statements on the primary projects we find.

Identified Case Studies

If anyone notes a project that could be a case study, let us and Jennifer Perry at ANCA know.

APPENDIX III-C: Working group meeting schedule/format-All Working Group Meeting Structure Notes

For Distribution to the Working Group Facilitators and Meeting Supporters

The October 3rd All Working Group Meeting Format

After the welcome and the project update, there will be two primary sessions: the Working Group Breakout Session and the County Breakout Session.

Working Group Breakout Session

The primary goal of the breakout session is to allow members of each working group to rotate through a series of tables (one for each group) to talk, learn, share and discuss the themes, goals, and indicators that have been developed. In addition, members will be talking and documenting what connections they see across the working groups. They will exchange ideas and identify potential projects that cross or overlap working group areas.

The format of the event will be as follows:

1. Seven tables will be set up to accommodate each Focus Area Working Group.
2. At each table will be one or more Working Group members acting as a Facilitator and an E & E staff person. The Facilitator and E & E staff person will remain at the table throughout all the rotations and will greet each working group as they arrive for their session.
3. Working Groups (as a group) will move from table to table, spending 30 minutes at each table.
4. As a new group arrives, the Facilitator will be able to use the following documents to introduce the working group to the visiting working group: The Working Group Report, Themes and Goals, and Current Indicators. *Note: These materials will be shared with everyone before the event for their review, so hopefully they are not seeing this material for the first time.*
5. The Facilitator and the E & E staff person can then have a conversation with the visiting Working Group, and the following general topics can be discussed:
 - Working Group themes, goals and indicators
 - Do you see similarities with your working group? What are they?
 - How can these themes and goals be connected – to gain efficiencies and build a stronger plan?
 - Where do you see these goals overlapping with the goals of your working group?
 - What current projects do you know of that capture the goals of this working group?

- What possible new project can you think of that might connect this working group with your working group. (Each table will be provided with Project Description Forms for use during this time)
- Looking into the future what resources or policies would need to be in place before these projects can be moved forward or implemented?

Actions

1. Discussions need to remain focused and targeted. Facilitators should be ready to go through the documents and ask for comments, and move as quickly as possible on to asking questions and collecting ideas.
2. Hand out the Theme and Goal survey tool that they can use to record their notes as they learn about the themes, goals and preliminary project ideas of each group. To help find common threads, and help find connections which will create a stronger more comprehensive final plan.
3. What types of projects could you envision this Working Group doing? We want to connect these groups – how could we connect this group, and your group through a project.
4. They hand the survey back before they go to the next station.

NOTE: As time is short, some ideas and comments may not be able to be discussed. Facilitators and E & E staff should encourage attendees to write out their ideas and leave them behind at the table, or take notes on who has more to say and we can follow up with people after the meeting. ANCA will have staff on hand to take detailed notes as well.

OUTCOMES: Notes on Themes, Goals and Indicators, completed Project Forms, complete Theme and Goals documents, connections between groups notes from discussions that include opportunities for overlap, connections, etc.

| Table | Table | 1 | 2 | 3 | 4 | 5 | 6 |
|-------|------------------|----------|----------|-----------|-----------|-----------|-----------|
| 1 | Econ Dev | Waste | Water | Work Land | LC LU | Transport | Energy |
| 2 | Energy | Econ Dev | Waste | Water | Work Land | LC LU | Transport |
| 3 | Transport | Energy | Econ Dev | Waste | Water | Work | LC LU |

| | | | | | | | |
|---|-----------|-----------|-----------|-----------|-----------|----------|-----------|
| | | | | | | Land | |
| 4 | LC LU | Transport | Energy | Econ Dev | Waste | Water | Work Land |
| 5 | Work Land | LC LU | Transport | Energy | Econ Dev | Waste | Water |
| 6 | Water | Work Land | LC LU | Transport | Energy | Econ Dev | Waste |
| 7 | Waste | Water | Work Land | LC LU | Transport | Energy | Econ Dev |

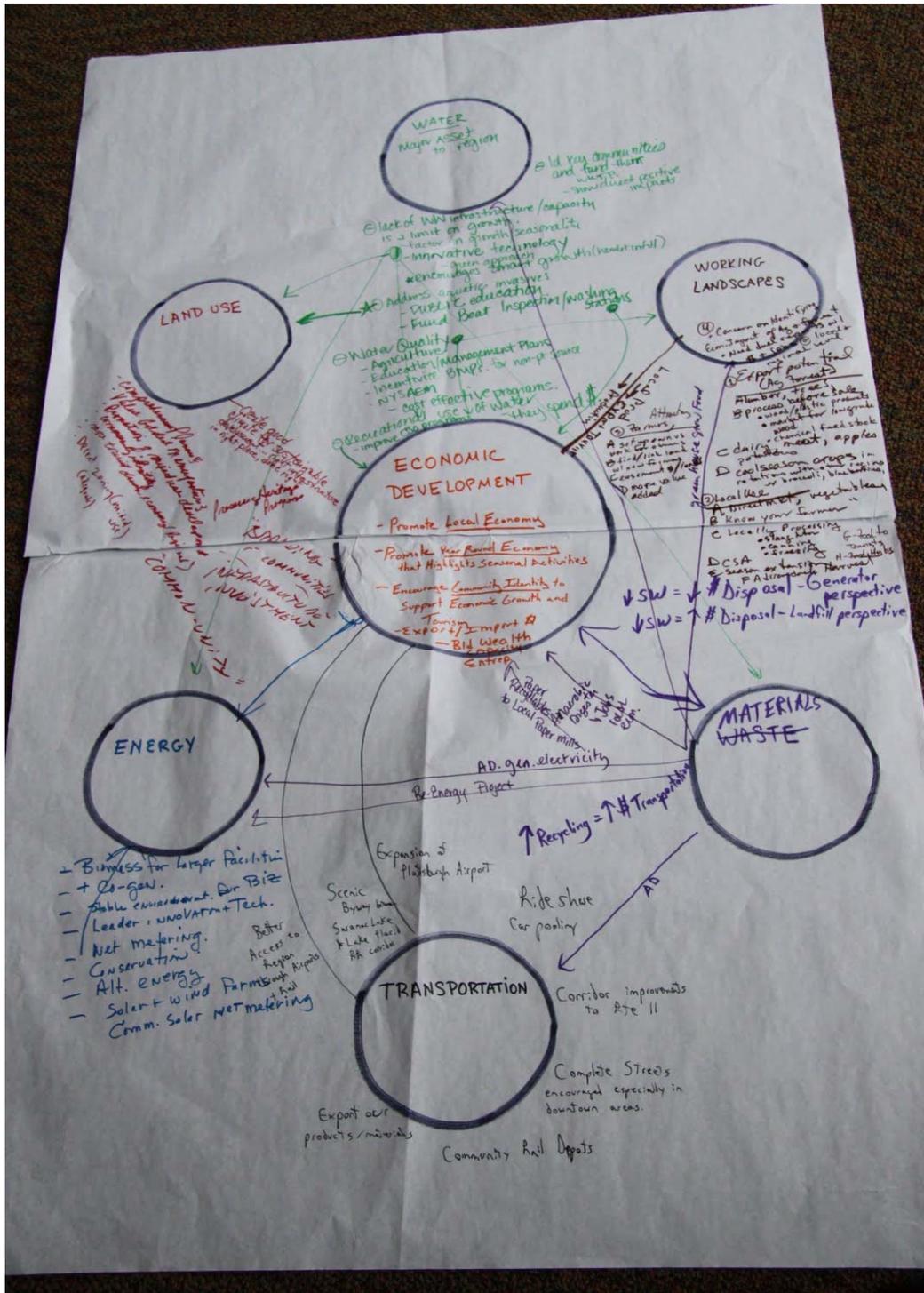
County Breakout Session

1. At the conclusion of the Working Group Breakout Sessions, the seven tables will be relabeled not as Focus Areas, but as Counties.
2. Working Group members will leave their working groups, and self-assign themselves to their county.
3. An E & E staff person will be assigned to each table and will discuss the following with the groups:
 - What did you hear today that has a significant impact on your county?
 - What theme, goal, data point, information, project idea is missing? What does the planning team need to follow up on? Provide support info to help connect the issue with the planner.
 - Was a project or idea described happening in another county that could be happening in your county?
 - What benefits (or possible conflicts) did you identify?
 - How can these be supported or addressed?
 - Looking into the future what resources or policies would need to be accomplished before these projects can be moved forward or implemented?

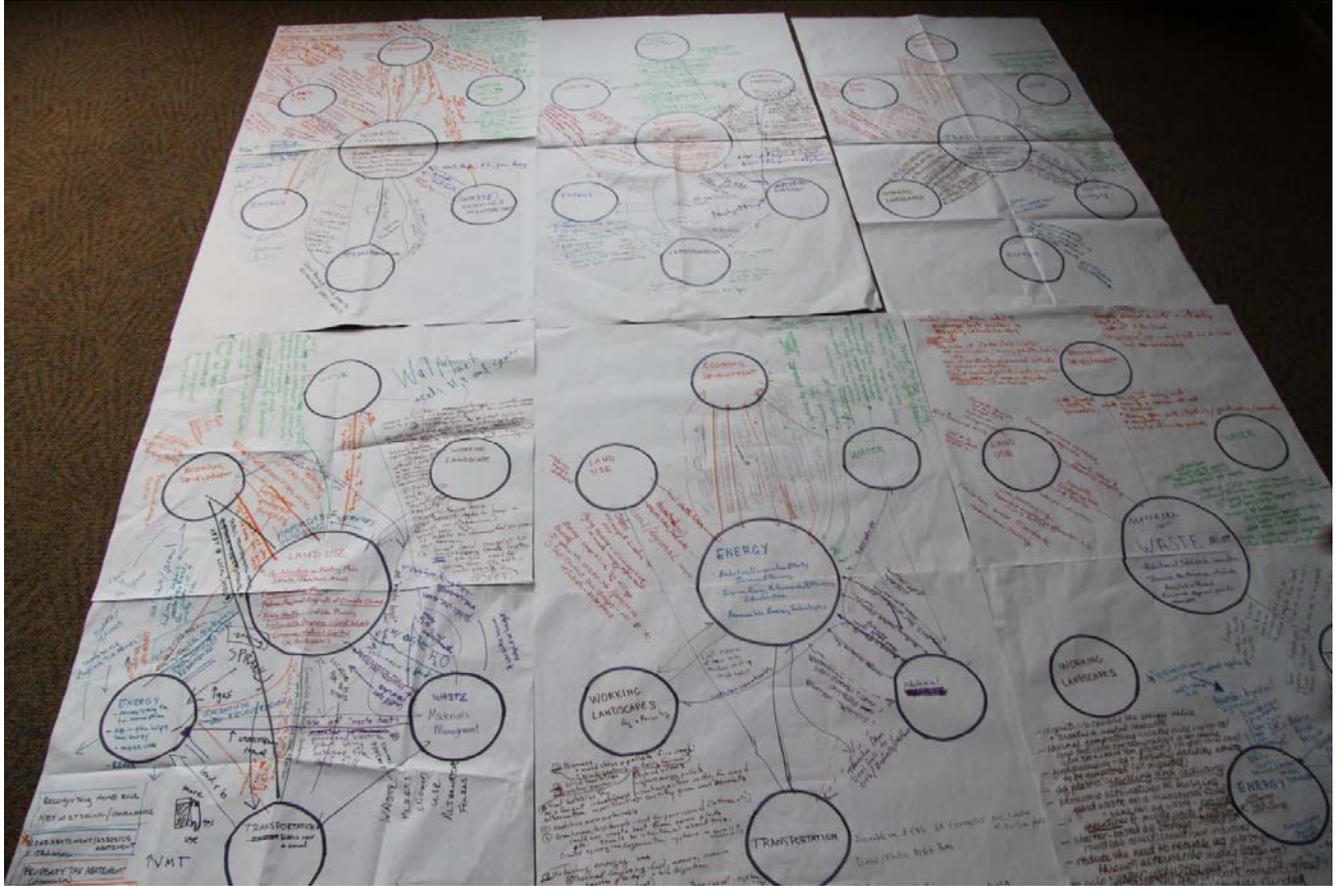
OUTCOME: Focus on data gaps and theme gaps, defining county benefits or conflicts, and identifying policies and resources needed. Notes will be written on large paper and submitted to the planning team.

| Table | County |
|--------------|---------------|---------------|---------------|---------------|---------------|---------------|-----------------|
| X | Clinton | Essex | Franklin | Hamilton | Jefferson | Lewis | St. Lawrence |

APPENDIX III-D: Working group meeting schedule/format-All Working Group meeting mindmap summaries



APPENDIX III-D: Working group meeting schedule/format-All Working Group meeting mindmap summaries



APPENDIX III-D: Working group meeting schedule/format-All Working Group meeting mindmap summaries

| PROJECT NAME/CONCEPT | GHG REDUCTION | PROVIDES ECONOMIC IMPACT | CONTRIBUTE TO EMPLOYM. | EXISTING LOCAL CHAMPION |
|---|---------------|--------------------------|------------------------|----------------------------|
| Farmer's Markets - Expansion/Access | | | | |
| Access to Land - Funding - start up for Substantial Initial Investment Small Farmers | | | | |
| Incentives/Public Outreach - Biomass | | | | |
| Urban Forestry Programs - Community Nurseries for Native Species | | | | |
| Design Guidelines - Model Zoning Codes in Comprehensive Plan Develop Model Language | | | | |
| Mapping - coordinated/Regional Amenities Recreational / Database built by users-apps Cultural online website | | | | |
| Education - Local Officials - linkages WL & Land Use | | | | |
| Expand Shipping Companies for Local Produce | ✓ | ✓ | | ✓ Philo's cat |
| Rail - Forestry movement Products (Maintain existing Rail) | ✓ | ✓ | ✓ | ✓ Area NE Economic County |
| Depot/Distribution Centers (Wood Pellets) - Clustering Markets Community Grant for Depots - ID locations Private Sector run? | ✓ | ✓ | ✓ | ✓ |
| Signage - Recreational Amenities / Local Businesses | | ✓ | | |
| Advertising - Recreational Ops / Tours Chamber of Commerce | | ✓ | | ✓ Mountain Tourism Council |
| Shuttles/Buses - reliable schedule / critical mass link to Recreation Assets - is this possible? | | | | |
| Snowmobiles - Electric etc. / Hydro engines Subsidies/Incentives | | | | |
| Food Hubs - Growing Local Food: Producing for Local Market (Food Embedded Infrastructure & Education Group pellet boilers Pilot Project - Grass Energy (use of empty fields in Farms) Education Programs - like Model Neighborhood Homes pilot use of wood pellets in Homes | ✓ | ✓ | | |
| Wood shed Analysis - Sustainable? Answer Question: What can we NC sustainably produce? Is this appropriate under NREACT? | | | | |
| Education - Permaculture | | | | |

APPENDIX V-A: Public meetings and outreach-Press Release



A HOMEGROWN SUSTAINABILITY PLAN FOR THE NORTH COUNTRY

GET INVOLVED

Members of the 7-county North Country consortium have been working hard on a Sustainability Plan for the region that includes key economic development and environmental goals. You are invited to take part in a public meeting series, where you can hear an overview of the Plan, see some of the principles in action and weigh in on goals and future project ideas. Please join us!

UPCOMING EVENTS

SATURDAY, SEPT. 29: 3:30-5:30 p.m., Homesteading Festival, Paul Smith's College VIC

MONDAY OCT. 1: 6-8 p.m., Adirondack Museum, Blue Mountain Lake. Hosted by Bill Farber.

TUESDAY OCT. 2: 6-8 p.m., Clinton Community College, Stafford Theater; Plattsburgh. Hosted by William Meyers of Casella Waste.

WEDNESDAY OCT. 3: 5-8 p.m. Edwards Knox Central School, Russell. Meeting begins with a tour of the school's biomass boiler system, public comment period starts at 6 p.m. Hosted by John Daniels and Sue Kelly.

THURSDAY, OCT. 4: 6-8 p.m., Fort Drum. Host Carl McLaughlin will highlight LEED certified homes built on post.

FRIDAY, OCT. 5: 10 a.m. to noon, Paul Smith's College, Pine Room

FRIDAY, OCT. 5: 6-8 p.m., Lake Placid High School. Host Tammy Morgan presents on biodigesters

SATURDAY, OCT. 6: 11 a.m. to 2 p.m., Pancake breakfast at American Maple Museum, Croghan, with the meeting at noon. Tour Croghan Dam before breakfast at 10 a.m., meet at 9746 South Bridge St., Croghan



REGISTER AT WWW.ADIRONDACK.ORG

CONTACT: Jen Perry, jperry@adirondack.org, 518-891-6200

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APPENDIX V-B: Public meetings and outreach-Cover slide for outreach presentation

A Homegrown Sustainability Plan

POWER

Plan is Expected to Enhance Economic Development While Reducing Carbon Emissions and Increasing Energy Savings

Public Meeting Series



APPENDIX V-C: Public meetings and outreach-Final Plan feedback form

| | Column1 | Column2 | Column3 | Column4 |
|---|----------------------|--------------------|-----------------------|------------------------------------|
| Chapter Please fill in comments in each chapter's section, inserting lines where necessary. | Reviewer Name | Page Number | Section Number | Proposed Solution or Change |
| Chapter 1 | | | | |
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Projects included in the appendices or within the content of this report are meant to provide examples of potential ways to address the strategies identified in the report and were submitted to the planning consortiums as part of the public outreach efforts by the consortium. These projects are in no way prioritized or guaranteed to receive funding through Phase II Implementation Funding of the Cleaner, Greener Communities Program. Projects not listed in the appendices section or content of the plan will have equal opportunity to submit an application for funding through Phase II. Regardless of being listed in the plan, a Consolidated Funding Application must be submitted in order to be considered for funding in Phase II. All projects must address the qualifications and eligibility requirements as listed in the Cleaner, Greener Communities Phase II solicitation notice.