

**Ozone Advance Program
Action Plan
Cumberland County, North Carolina**



**Planning Today
for Clean Air
Tomorrow**

A joint effort by USEPA Region 4, North Carolina Department of Environment and Natural Resources, and the Cumberland County Board of Commissioners, Town of Falcon, City of Fayetteville, Fort Bragg Military Reservation, Town of Godwin, Town of Hope Mills, Town of Linden, Town of Spring Lake, Town of Stedman and Town of Wade and the Fayetteville Area Metropolitan Planning Organization

September 12th, 2014

AIR QUALITY STAKEHOLDERS OF CUMBERLAND COUNTY

SELECTED OZONE CONTROL STRATEGIES AND IMPLEMENTATION SCHEDULE

AWARENESS

STRATEGY	STRATEGY DESCRIPTION/IMPACT	IMPLEMENTATION DATE	ADOPTING JURISDICTION
Promote Bus Ridership in the Cumberland County High Schools	Fayetteville Area System of Transit will implement a Transit Marketing/Outreach Campaign in the high schools. This strategy impacts 3,500 students within the FAST service area. This will lower NOX emissions by increasing future mass transit use and lowering VMT.	Implementation date will be in conjunction with public involvement and Transit Development Plan outreach activities. This project began April 2014. (Updated August 2014)	City of Fayetteville/Transit
Air Quality Poster Contest	Promote art contest with Air Quality theme. 12 winners included in calendar distributed to stakeholders and community promoting conservation efforts for grades K-5. Offered in Cumberland County and expanding to portions of Hoke, Robeson, and Harnett Counties, private and public schools in 2014-2015.	Annual (Updated September 2014)	FAMPO / Sustainable Sandhills
Direct Community Outreach	Display Air Quality information at community festivals and events, using educational collateral and games. Enhanced collaboration includes Info booth at FireAntz Hockey team Kids Nights, a “Green Football Fridays” program with Cumberland County Schools, and a Clean Air Green Initiative at the NC Turkey Festival in Hoke County in 2014-2015.	Ongoing (Updated September 2014)	FAMPO / Sustainable Sandhills
Tree Power	Implement program to educate customers about benefits of trees to the environment & air quality while demonstrating the proper placement of trees near utilities. 1,000 free tree seedlings will be provided during community education seminars and events. Trees reduce/absorb air pollution and help reduce energy consumption.	Ongoing (Updated September 2014)	Fayetteville Public Works Commission

AWARENESS

STRATEGY	STRATEGY DESCRIPTION/IMPACT	IMPLEMENTATION DATE	ADOPTING JURISDICTION
Train Building Energy Monitors	Fort Bragg trains Repair and Upgrade Soldiers to look for energy conservation possibilities at the facility level. This strategy will reduce the demand for electricity and the amount of fossil fuel required for power generation.	Ongoing (Updated August 2014)	Fort Bragg
Utility Consumption Reports	Building occupants receive a monthly utility consumption report to create awareness on energy use in facilities. This education & awareness initiative has been developed to promote energy conservation in assigned/rental housing.	Ongoing (Updated August 2014)	Fort Bragg

ENERGY REDUCTION

STRATEGY	STRATEGY DESCRIPTION/IMPACT	IMPLEMENTATION DATE	ADOPTING JURISDICTION
Public Transportation construction of Multimodal Facility-Leadership in Energy and Environmental Design (LEED) certified.	The construction of a multi-modal transit facility provides opportunity to layer mass transit and low-emissions transit. This strategy ranges from improving air and water quality to reducing solid waste, benefiting owners, occupiers, and society as a whole.	Multimodal facility construction has been approved with expected completion Oct/Nov 2015. (Updated August 2014)	City of Fayetteville/Transit
Green Building Certification	Transit system received “Green” certification in 2012 and is continuing efforts for re-certification. This strategy reduces solid waste and water consumption and reduces operating costs.	Ongoing (Updated September 2014)	City of Fayetteville/Transit
Develop alternative energy production opportunities that are financially viable for the City	Clean energy sources reduce the volume of fossil fuel burning required for power generation. Exploring options for photovoltaic solar farms, biomass-to-energy, low-flow hydro and Methane gas-to-energy production.	Ongoing (Updated September 2014)	City of Fayetteville
Retrofit City buildings, expand existing smart building monitoring system	Through moderate general fund appropriations, retrofit City buildings for more energy efficient lighting, HVAC units and motors, purchase energy star rated appliances and further reduce energy consumption. This strategy reduces the regional demand for electricity and fossil fuel required for power generation.	Ongoing (Updated September 2014)	City of Fayetteville
Go Green Initiative	Energy and resource conservation program throughout Cumberland County Schools that reduces electricity consumption, water usage and solid waste production.	Ongoing (Updated August 2014)	Cumberland County Schools / Sustainable Sandhills

ENERGY REDUCTION

STRATEGY	STRATEGY DESCRIPTION/IMPACT	IMPLEMENTATION DATE	ADOPTING JURISDICTIONS
Local Food Access Program	Educate community on benefit of sourcing food locally, reducing miles traveled by food and consumers. Liaison with Downtown Restaurant Association, Slow Food Fayetteville in the Sandhills, Sandhills Farm to Table Cooperative.	Ongoing (Updated August 2014)	Sustainable Sandhills
Advanced Metering Infrastructure	Installation of Advanced Metering Infrastructure to provide utility services through computer-based remote control, automation and two-way communications. System will provide 115,000+ PWC customers technology to better manage and reduce energy and water consumption. Benefits will also include reduction in service trips/vehicle usage. This strategy will lower NOX emissions by reduction of energy consumption and significant reduction of vehicle use/fuel consumption.	Began in June 2014, this three year project has an estimated completion date of June 2017. (Updated August 2014)	Fayetteville Public Works Commission
LED Street Lighting	Conversion of 15,000+ streetlights to LED. Because LEDs have a longer life and use less energy than traditional street lights immediate benefits will include reduction in energy consumption and reduction in service trips/vehicle usage. This strategy will lower NOX emissions by reduction of energy consumption and significant reduction of vehicle use/fuel consumption.	Began in June 2014, this three year project has an estimated completion date of June 2017. (Updated August 2014)	Fayetteville Public Works Commission
Improved Building Codes	Enforce the improved NC Building Codes adopted with the goal of enhancing commercial building energy efficiency by 50% in commercial construction and 30% in residential construction. This strategy will lower NOX emissions by reduction of energy consumption.	Ongoing (Updated August 2014)	Countywide
Building Efficiency	Through moderate general fund appropriations, retrofit City buildings for more energy efficient lighting, HVAC units and motors, purchase energy star rated appliances and further reduce energy consumption by expanding the City's existing smart building monitoring system.	Ongoing (Updated August 2014)	City of Fayetteville

ENERGY REDUCTION

STRATEGY	STRATEGY DESCRIPTION/IMPACT	IMPLEMENTATION DATE	ADOPTING JURISDICTIONS
LEED Silver or Equivalent Building Standard	Savings goal related to projected new building space starting 2012. 20% electrical and natural gas savings, GHG reduction of 154 tons (CO ₂ Equivalent) annually and total of 2,000 tons by 2025.	2012 (Updated September 2014)	Fayetteville State University
FSU Energy-Savings Performance Contract (ESPC) Program	15% electrical and natural gas savings, GHG reduction of 183 tons (CO ₂ Equivalent) annually and total 2,000 tons by 2025; Upgrades applied to 900,000 SF of FSU facilities (Savings begin in 2015).	2015 (Updated September 2014)	Fayetteville State University
UNC-GA ESPC (Lighting Only)	Upgrades applied to 370,000 SF of FSU facilities with demonstrated energy savings beginning in 2015. 20% savings of lighting system electrical, GHG reduction of 23 tons (CO ₂ Equivalent) annually and total 250 tons by 2025.	2015 (Updated September 2014)	Fayetteville State University
Continuous Re-Commissioning Program	Re-commission facilities to maintain efficiency as use and occupancy changes.	2016 (Updated September 2014)	Fayetteville State University
Solar Photovoltaic (PV) Systems	1:1 offset of utility-generated electric emissions, GHG reduction of 250 tons (CO ₂ Equivalent) annually and total 2,500 tons by 2025; PV array area equal to 20% of campus GSF; PV arrays ramp from 10% (2015) to 20% (2017). *This strategy will no longer be implemented due to budget cuts.	2014 (Updated September 2014)	Fayetteville State University
Improved Space Utilization and Building Scheduling	12% electrical and natural gas savings, GHG reduction of 455 tons (CO ₂ Equivalent) annually and total 5,000 tons by 2025; Savings applies to all buildings. Savings ramp up from 3% (2015) to 12% (2018).	2015 (Updated September 2014)	Fayetteville State University
Food Waste Composting	Capture 100% of food waste, both pre- and post-consumer; GHG reduction of 50 tons (CO ₂ Equivalent) annually and total 600 tons by 2025.	2014 (Updated September 2014)	Fayetteville State University

ENERGY REDUCTION

STRATEGY	STRATEGY DESCRIPTION/IMPACT	IMPLEMENTATION DATE	ADOPTING JURISDICTIONS
Green and energy efficiency initiatives	Revive the Green Committee to research best practices and develop a feasible and fiscally responsible county government wide three-year action plan with consistent departmental green procedures.	Summer 2015 (Updated September 2014)	Cumberland County
Retro-commissioning	Facilities are surveyed to ensure systems are performing as they were designed. Improvements such as occupancy schedules and sensors, variable frequency drives, etc are normally installed during this process. This strategy ensures equipment is functioning efficiently.	Ongoing (Updated September 2014)	Fort Bragg
Thermal Energy Storage	Water is chilled in the evening when energy prices are lower. Chilled water is used in district system. This strategy reduces energy cost.	Ongoing (Updated September 2014)	Fort Bragg
Purchase Energy Star Equipment	Energy efficient products are procured and installed. This strategy reduces energy consumption.	Ongoing (Updated September 2014)	Fort Bragg
Implement “Low-cost/No-cost” energy conservation measure	Improve facility energy use intensity by installing weather stripping around windows and doors. This strategy improves the building envelope, thus reducing energy consumption.	Ongoing (Updated September 2014)	Fort Bragg
Upgrade lighting in facilities	Inefficient lighting is replaced with energy efficient bulbs such as induction or compact fluorescent. This strategy conserves energy.	Ongoing (Updated September 2014)	City of Fayetteville

ENERGY REDUCTION

STRATEGY	STRATEGY DESCRIPTION/IMPACT	IMPLEMENTATION DATE	ADOPTING JURISDICTIONS
Load management in cubicle/office space	Received funding for “smart strips,” a load sensing power strip. This strategy reduces energy consumption by 30% based on meter data.	Ongoing (Updated September 2014)	Fort Bragg
LEED certifiable facilities	Improve federal facilities resource efficiency. This strategy ranges from improving air and water quality to reducing solid waste, benefiting owners, occupants & society as a whole.	Ongoing (Updated September 2014)	Fort Bragg
Local Foods Supply Chain Project	The Center for Environmental Farming Systems received a grant to build and evaluate supply chains for local farmers and fishers to supply large-scale markets in North Carolina. They will be working with Fort Bragg and its food suppliers to increase local foods in the commissaries and dining facilities. This strategy will reduce NOx by reducing VMT.	Ongoing (Updated September 2014)	Center for Environmental Farming Systems
Green and energy efficiency initiatives	Assess County government departmental recycling practices in place and evaluate improvements. All schools as well as state and county buildings have recycling bins; two trucks pick up the bins daily. This strategy reduces solid waste and operating costs.	Ongoing (Updated September 2014)	Cumberland County

TRANSPORTATION

STRATEGY	STRATEGY DESCRIPTION/IMPACT	IMPLEMENTATION DATE	ADOPTING JURISDICTIONS
Sidewalks	Fayetteville Area System of Transit, in conjunction with the City of Fayetteville, acquired New Freedom funds that constructed over 2.15 miles of sidewalks from Murchison Road and Hogan Street to enhance connectivity, air quality and safety. This strategy will enhance transportation options for ADA residents and creates a pedestrian friendly community which in turn reduces gasoline consumption.	Ongoing (Updated September 2014)	City of Fayetteville / Transit
Veteran's Call Center	The City of Fayetteville, in partnership with Fort Bragg, the Veterans Affairs Medical Center and surrounding counties, received a Veterans Transportation and Community Living Initiative (VTCLI) grant awarded through the Federal Transit Administration for \$46,680 for the development of a joint agency website and call center, comprehensive directory of agency and provider contacts for users pertaining to their transportation needs. Fayetteville Area System of Transit will include its web-based transit trip planner on the site, which will allow all site visitors to plan trips using the FAST transit network. The call center hours 7 a.m. until 4:30 p.m. on weekdays and an after-hours during evenings and on weekends. The center will initially refer to participating providers and agencies, with plans to provide trip-planning for other providers - even linking trips among multiple providers if necessary. The veterans call center will be incorporated into FAST's existing telephone information center, but will have a separate telephone line using a call distribution system that can track and monitor calls. VTCLI funds will cover the cost of capital and some marketing and planning for the project. A JARC grant for the project's operating costs was awarded by FTA in August 2014.	Ongoing (Updated September 2014)	City of Fayetteville/ Transit
Blue Toad Device use	Reduce idle time and travel times by monitoring vehicle timing and optimizing traffic signal timing , which will reduce gasoline consumption and emissions.	Ongoing (Updated September 2014)	City of Fayetteville
New Transit Route – Strickland Bridge Road	The purpose of this service is to provide transportation options in a high growth area for commercial and institutional development. This strategy will assist with reduction of Vehicle Miles Travelled (VMTs).	Ongoing (Updated September 2014)	City Of Fayetteville/Transit

Perform financial analysis of future vehicle replacements	Analyze diesel-powered vehicles replacement with CNG-powered and/or hydraulic assist hybrid garbage trucks. This strategy reduces NOx emissions.	Ongoing (Updated September 2014)	City of Fayetteville
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TRANSPORTATION

STRATEGY	STRATEGY DESCRIPTION/IMPACT	IMPLEMENTATION DATE	ADOPTING JURISDICTIONS
Fleet Management	Implement efforts to better manage the overall requirements of the PWC Fleet and lower fuel consumption and emissions. Automated Information Modules and GPS modules have been installed to provide information to aid in minimizing emissions and to generate information to identify and minimize unnecessary idling of vehicles. This strategy reduces NOx emissions.	Ongoing (Updated September 2014)	Fayetteville Public Works Commission
Alternate Fuel/Hybrid Vehicles/Equipment	Annually replacing existing fleet and equipment with vehicles that reduce emissions and lower fuel consumption. Replaced 5 heavy duty diesel trucks in 2014 with reduced emission diesel engines, and have replaced 8 bucket trucks with 2 hybrid buckets and 6 lower emission diesel engines. Currently operating 5 other hybrid cars/SUVs. Also replaced spark ignited propane forklifts with zero emission all electric forklifts, a diesel directional board with zero emission solar powered message board, and converted construction equipment to Tier 4 emission standards.	Annual (Updated September 2014)	Fayetteville Public Works Commission
Idle Reduction Policy	Enforce the City's Idle Reduction Policy currently in place for city-owned vehicles and equipment. This strategy results in a 14-17% fuel consumption reduction with a corresponding NOx reduction.	Ongoing (Updated September 2014)	City of Fayetteville

<p>Student, Faculty, and Staff Commuting Improvements</p>	<p>3% reduction in transportation mileage, GHG reduction of 38 tons annually, and total of 500 tons by 2025; Savings applies to all students, faculty/staff; Low-emissions vehicle preferred parking campaign (started 11/2012 and ongoing) with all current and future new building projects; Bike rack campaign (started 2/2012 and ongoing) with all current and future new building projects; New covered FAST bus stop (started 2/2012, expected completion 2015). This strategy reduces NOx emissions.</p>	<p>Ongoing Implemented in 2012 with expected completion in 2015. (Updated September 2014)</p>	<p>Fayetteville State University</p>
<p>Providing Transportation service to FSU students</p>	<p>Fayetteville State University students will be provided transportation services and in return will assist with the financial cost of the service. This strategy will help reduce emissions, promote bus-ridership, and financially help the university to continue these services.</p>	<p>January 1, 2015 (Updated August 2014)</p>	<p>City of Fayetteville/Transit</p>
<p>Providing free transportation to sporting events</p>	<p>High school students will be given a 30 day pass that will provide them with free transportation to attend sporting events or other school related activities between 3:00 and 11:00 pm. This strategy will help to reduce emissions by mass transiting students instead of multiple students driving to the same place on their own.</p>	<p>October 1, 2014 (Updated August 2014)</p>	<p>City of Fayetteville/Transit</p>

LAND USE

STRATEGY	STRATEGY DESCRIPTION/IMPACT	IMPLEMENTATION DATE	ADOPTING JURISDICTIONS
Falcon Zoning Ordinance Amendment to include Density Development and Mixed Use Development.	Density Developments allow for the division of land while requiring development on only 60% of the overall acreage with open space designation for the other 40%. Mixed Use Development allows for the flexibility of development to included commercial, residential, and open space.	Fall of 2013 Projected implementation 2-5 years.	Town of Falcon
Proposed Zoning Ordinance Amendment to include Density Development and Mixed Use Development	Density Developments allow for the division of land while requiring development on only 60% of the overall acreage with open space designation for the other 40%; Mandate interconnectivity (lateral access) between developments, particularly commercial; Landscaping standards, encouraging retention of existing trees. Mixed Use Development allows for the flexibility of development to included commercial, residential, and open space.	Fall 2013	Town of Godwin

Proposed Zoning Ordinance Amendment to include Density Development and Mixed Use Development	Density Developments allow for the division of land while requiring development on only 60% of the overall acreage with open space designation for the other 40%; Mandate interconnectivity (lateral access) between developments, particularly commercial; Landscaping standards, encouraging retention of existing trees. Mixed Use Development allows for the flexibility of development to included commercial, residential, and open space.	Adopted by the Town of Wade Zoning Board on October 8, 2013. (Updated September 2014)	Town of Wade
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LAND USE

STRATEGY	STRATEGY DESCRIPTION	IMPLEMENTATION DATE	ADOPTING JURISDICTIONS
Commercial Core Overlay District	Preserve and enhance small-scale commercial character, while providing for low-impact business opportunities with requirements for pedestrian pathways/sidewalks and amenities to include rear vehicular access, landscaping, and tree planting. This strategy reduces emissions by creating accessible walkways and reforestation of commercial areas.	Ongoing (Updated September 2014)	Town of Eastover
Zero Lot Line Development Conditional Use Permit	Zoning ordinance that requires a Conditional Use Permit for any proposed Zero Lot Line development (residential and Commercial). This strategy protects environmentally sensitive areas and provides green space, which offsets emissions.	Summer 2013; has been implemented throughout the corporate limits. (Updated September 2014)	Town of Eastover
Creation of greenscape review board for construction projects	Use of the required ‘Tree City USA’ Arbor Board to review landscape designs and site demolition plans for construction projects. This strategy minimizes tree loss during construction and assures proper plant selection/placement for passive solar design and heat island mitigation.	Ongoing (Updated September 2014)	Fort Bragg

Creation of tree bank mitigation for construction projects	Created a tree mitigation policy that requires onsite replanting for trees removed during construction or, if replanting is not possible on site, the funding for replanting is deposited into a mitigation tree fund that will fund replanting elsewhere on post. This strategy guarantees no deficit tree loss will result from construction projects.	Ongoing (Updated September 2014)	Fort Bragg
Enforcement of adopted and revised Unified Development Ordinance	For developing properties, require open space dedication, parkland dedication, tree preservation ordinance and landscape requirements. This strategy reduces the heat island effect and prevents ground level ozone production.	Ongoing (Updated September 2014)	City of Fayetteville

LAND USE

STRATEGY	STRATEGY DESCRIPTION	IMPLEMENTATION DATE	ADOPTING JURISDICTIONS
Possible Density Development-Conditional Zoning	Landscaping standards encourage retention of existing trees; Mandatory 40% open space, development on remaining 60%; Mandate interconnectivity (lateral access) between developments, particularly commercial.	Winter 2014/2015	Town of Linden
Proposed Ordinance Provisions	Riparian buffers, same as or similar to Cumberland County provisions, adopted August 2012; Tree preservation: Mandate double landscaping when clear cut, w/ extra credit given for retaining existing trees, similar to Hope Mills standards adopted October 2008; Mandate interconnectivity (lateral access) between developments, particularly commercial.	January –March, 2014	Town of Spring Lake

Open Space Development	Enforce the adopted and revised Unified Development Ordinance for developing properties requiring open space dedication, parkland dedication, tree-save areas, buffer zones, significant tree preservation and landscape requirements all of which reduce the heat island effect and prevent ground level ozone production.	Ongoing (Updated September 2014)	City of Fayetteville
Extension of Cape Fear River Trail	Once the Grove Street bridge is completed, the Cape River Trail will be extended; going south from Clark Park to Hoffer Road near a PWC water treatment plant. Asphalt sidewalks and bike paths will also be added. Parks & Recreation is partnered with the Linear Park Committee on this project; assistance fundraising.	Implemented May 2014. Estimated to be completed in the next 2-3 years (Updated August 2014)	City of Fayetteville and Cumberland Parks and Recreation
Open Space Development	Developing properties are required to include an area of open space with 24 trees per acre, reducing heat island effect and ground level ozone production.	Ongoing (Updated September 2014)	City of Fayetteville
Increase the permitted number of residential units allowed in commercial and mixed use areas.	The UDO supports up to 24 du in commercial areas and 32 du in mixed use districts. Having residents in close proximity to commercial services reduces fuel consumption with a corresponding reduction in NOx. Recent amendments offer increased density in certain areas to encourage redevelopment in a more sustainable pattern.	Ongoing (Updated September 2014)	City of Fayetteville
Protect and retain existing tree canopy and specimen trees during and after development	If a development plan has not been approved, a clear-cutting permit is required for the removal of trees on vacant land. Incentives are included in the UDO to encourage preservation of existing specimen trees and tree canopy during development. Trees and landscaping reduce NOx and uptake carbon dioxide.	Ongoing (Updated September 2014)	City of Fayetteville
New trees installed to moderate development by providing shade and reducing the effect of urban heat islands.	New development is required to include trees. Special attention is given to vehicular use areas (large expanses of pavement) and the area between streets and parking lots, resulting in carbon dioxide uptake and reduced NOx. Tree census was conducted Spring/Summer 2014.	Ongoing (Updated September 2014)	City of Fayetteville

<p>Redevelopment Toolbox</p>	<p>Incentives have been adopted to encourage redevelopment of existing sites and development of infill sites, thereby reducing sprawl with a corresponding reduction in fuel consumption and NOx.</p>	<p>Ongoing (Updated September 2014)</p>	<p>City of Fayetteville</p>
<p>Increase use of sustainable development practices.</p>	<p>Incentives have been adopted to encourage greater use of sustainable development practices and to support urban agriculture.</p>	<p>Ongoing (Updated September 2014)</p>	<p>City of Fayetteville</p>