

CMAQ in Tennessee: Policy and Process

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Congestion Mitigation and Air Quality Improvement (CMAQ)

- ◆ Primary purpose improving air quality
- ◆ Three basic requirements for projects
 - ◆ Must be transportation project
 - ◆ Must reduce emissions from mobile sources
 - ◆ Must benefit air quality in nonattainment and maintenance areas
- ◆ Must develop quantitative estimates of emission reductions for each project

Ground-level Ozone (O₃)

- ◆ Primary component of smog
- ◆ Ozone not emitted directly
- ◆ Forms when oxides of nitrogen and volatile organic compounds chemically react in the sun
- ◆ Sources of ozone precursors
 - ◆ Industrial facilities, electric utilities, motor vehicles, gasoline vapors, chemical solvents, combustion
- ◆ Summertime pollutant
 - ◆ Sunlight and hot weather accelerate formation

Properties of Ozone

- ◆ Ozone is an invisible, extremely reactive gas
- ◆ Molecule with three oxygen atoms
 - ◆ In stratosphere, protects life from sun's harmful rays
 - ◆ At ground level, harmful to breathe
- ◆ Ozone attacks lung tissue by reacting chemically with it
- ◆ Ozone's effects on lungs similar to too much sun on your skin

Ozone and Lung Health

- ◆ Difficult for people working or playing outside to breathe as deeply as normal
- ◆ Irritates airways, causing coughing, sore throat, pain when breathing deeply, shortness of breath
- ◆ Increases asthma attacks, use of medications
- ◆ Inflames and damages cells lining the lungs
- ◆ Increases susceptibility to respiratory infections
- ◆ Aggravates chronic lung diseases
- ◆ May cause permanent lung damage
- ◆ Increases risk of premature death from heart or lung disease

Sensitive Populations

- ◆ Active children
- ◆ Active adults of all ages
- ◆ People with asthma or other respiratory diseases
- ◆ People with unusual susceptibility to ozone

New Ozone Standard – Most Recent Schedule (Tentative)

- ◆ July 2011 - EPA expected to announce final ozone standard
- ◆ January 2012 - State nonattainment recommendations to EPA
- ◆ July 2012 - Final designations by EPA
- ◆ July 2015 – Attainment SIPs due

Nashville Area Ozone Levels

- ◆ EPA proposed range of 0.060 to 0.070 ppm

- ◆ EPA decision in July 2011

- ◆ Three-year ozone averages

	<u>2008-10</u>	<u>2007-09</u>
◆ Cedars of Lebanon State Park Wilson County	0.072	0.076
◆ Rockland Recreation Area, Old Hickory Dam, Sumner County	0.076	0.078
◆ Three other monitors	0.069	0.072 -
◆ Areas designated as unit		0.074

- ◆ In Nashville region, five counties

- ◆ Davidson, Rutherford, Sumner, Williamson, Wilson

16 Counties CMAQ Eligible

- ◆ CMAQ projects only in air quality nonattainment and maintenance areas
- ◆ Five areas now eligible for CMAQ projects
 - ◆ Chattanooga, Clarksville, Knoxville, Memphis, Nashville
 - ◆ Knoxville N/A area includes Jefferson County (Lakeway MPO)
- ◆ More nonattainment areas likely
 - ◆ Cheatham, Dickson and Robertson possible

American Lung Association State of the Air 2011

- ◆ Released April 27, 2011
- ◆ 12th annual report on air quality across nation
- ◆ List of metropolitan areas with worst air
- ◆ Most cities have improved air quality
- ◆ Half the nation has unhealthy levels of air pollution
- ◆ Middle Tennessee failing grades for ozone
 - ◆ F for Davidson, Sumner, Wilson, Williamson
 - ◆ D for Rutherford

Vulnerable Populations in Middle Tennessee (5 counties)

◆ Pediatric asthma	27,989
◆ Adult asthma	81,382
◆ Chronic bronchitis	42,725
◆ Emphysema	19,670
◆ Cardiovascular disease	<u>347,580</u>
◆ Total	519,346

*Source: American Lung Association
State of the Air 2011*

CMAQ Process in Tennessee

- ◆ Agency roles
- ◆ Overview of TDOT process for selecting projects
- ◆ CMAQ project policies
- ◆ Details of current project competition

Agency Roles

- ◆ MPOs/TPOs
 - ◆ Work with local governments to prepare CMAQ project proposals
 - ◆ Submit proposals to TDOT
 - ◆ Track project implementation
 - ◆ Submit project status reports to TDOT
- ◆ Local governments
 - ◆ Work with MPOs to develop proposals
 - ◆ Implement projects
 - ◆ Report to MPOs on project status

Select Projects Through Statewide Competitions

- ◆ Annual competition for all projects
 - ◆ October – December schedule
 - ◆ Proposals evaluated from MPOs and TDOT
 - ◆ Six nonattainment MPOs including Lakeway
- ◆ Explicit project selection criteria
- ◆ All proposals require emission reduction analyses
- ◆ Proposals evaluated and scored by TDOT staff

CMAQ Project Selection Criteria

- ◆ Major project selection criteria
 - ◆ Estimated emission reductions
 - ◆ Cost-effectiveness of emission reductions
 - ◆ Projects that address CMAQ priorities
 - ◆ Innovative projects
 - ◆ Impact on diversity and comprehensiveness of regional initiatives
 - ◆ Benefits for multimodal infrastructure
 - ◆ Project milestones, activities and management plan

Proposal Requirements

- ◆ Detailed project description
- ◆ Provide all requested information in the narrative proposal itself
- ◆ Identify projects to be “flexed” to FTA
- ◆ If project is continuation, describe existing project and relationship to proposal
- ◆ Identify/verify all sources of match funding

Proposal Requirements

- ◆ Projects must not add highway capacity
- ◆ Avoid ineligible project elements
- ◆ Do not include CO₂ emission estimates
- ◆ Describe recent history of successful project implementation

Emission Analyses and Cost-Effectiveness

- ◆ No carbon dioxide emission estimates
- ◆ Need more uniformity of emission reduction estimation methods
- ◆ Guidelines intended to establish voluntary limits on assumptions
 - ◆ Encourage realistic and reasonable assumptions
- ◆ Need more consistency in analytical methods
 - ◆ Assume 260 days for intersection improvements or other signal-related projects, not 365

CMAQ Project Issues

- ◆ No changes in scope unless approved by TDOT and the MPO/TPO
- ◆ If match is proposed, the TIP and TDOT contract will include that match
- ◆ After adding a project to TIP, request contract from TDOT
- ◆ Obligate within two years of TDOT contract with project sponsor
- ◆ Begin billing within one year of obligation

Project Tracking

- ◆ Quarterly reports on project status
- ◆ Local governments send reports to MPO/TPO
- ◆ MPOs/TPOs send information on all CMAQ projects to TDOT
- ◆ TDOT will add expenditure information from Edison to reports and ask MPOs to verify
- ◆ TDOT will contact MPO and local government about projects not achieving milestones

Spring 2011 CMAQ Competition

- ◆ Proposal Deadline – July 1, 2011
- ◆ Meeting to discuss proposals – August 5
- ◆ \$21.5 million for FY 2012 funding
- ◆ Air quality analytical assumptions
 - ◆ Reasonable and realistic assumptions in estimating emission reductions earn higher scores
 - ◆ Document accuracy and reasonableness of emission method

CMAQ Projects Funded in 2010

- ◆ 37 local government projects
 - ◆ 21 for Nashville Area MPO
- ◆ FY 2011
 - ◆ \$33.96 million total - \$10.58 million Nashville
- ◆ FY 2012
 - ◆ \$16.11 million total - \$3.60 million Nashville
- ◆ FY 2013
 - ◆ \$13.2 million total - \$4.01 million Nashville
- ◆ FY 2014
 - ◆ \$1.61 million total - \$1.61 million Nashville

2010 – 21 Projects in Nashville

- ◆ BRT Vanderbilt/Hillsboro/West End - \$4.4 M
- ◆ Regional Ridesharing - \$2.5 M over 4 years
- ◆ Regional Van Pools - \$1.99 M over 3 years
- ◆ Goodlettsville Bike/Pedestrian Plan - \$3 M
- ◆ Signal System Upgrade Phase 3B - \$0.6 M
- ◆ ATIS Phase 1B – Incident Response \$1.64 M
- ◆ Bus Seat Guarantee \$0.6 M over three years
- ◆ Three air quality education projects
 - ◆ Clean Air Partnership - Total of \$1.02 M

2010 – 21 Projects in Nashville

◆ Greenways

- ◆ West Division St., Mount Juliet, \$517,241
- ◆ Lower Station Camp Creek Rd., Sumner Co. \$100,000
- ◆ Expansion of regional bus services - RTA
 - ◆ \$800,000 over 4 years
- ◆ Express bus service from Williamson County
 - ◆ \$720,000 over 3 years
- ◆ Long Hollow Pike Signal Synchronization
 - ◆ \$300,000
- ◆ Closed Loop Signal System in Lebanon
 - ◆ \$181,500

Local Government Opportunities

- ◆ Diesel Retrofits and Idling Reduction Technologies
- ◆ Employers Commuter Choice Program
- ◆ Green Island Biofuels Infrastructure Grants



Diesel Retrofits Statewide Competition

- ◆ Summer 2011 - \$4.3 million in CMAQ funds
- ◆ Partner with heavy-duty diesel owners to purchase and install retrofit and idling reduction technologies
 - ◆ Includes public-private partnerships
- ◆ Candidates for retrofits
 - ◆ Road construction equipment
 - ◆ School buses
 - ◆ Local government diesels
 - ◆ Transit buses
 - ◆ Waste hauling vehicles

Employers Commuter Choice Program

- ◆ Travel demand management project
- ◆ TDOT partnership with local governments
- ◆ Aimed at employers
- ◆ Encourage employers to make it easier and more attractive/convenient for employees to use transportation alternatives
- ◆ Transit passes, park and ride lots, rock star parking for carpools, flexible benefits for transit and vanpools, onsite lunch facilities

Green Islands Biofuel Grants

- ◆ Establish network of biofuel stations (“Green Islands”) along interstate highways
- ◆ Locate E85 and B20 stations no more than 100 miles apart along corridors
- ◆ Summer 2011 request for grant applications
- ◆ Open to fuel stations and farm coops
- ◆ Grants up to \$45,000 per pump
- ◆ Minimum 20 percent match from fuel station



For more information

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