

Response to Comments Regarding Public Agency Policy for Construction Equipment

Several individuals expressed concern that the emissions caused by the construction industry have been overestimated in the emissions inventory. Some respondents were concerned that the model used to develop the estimates assumes that machinery operates at full power for a full day, thus inflating the impact of emissions.

NCTCOG staff contacted the Texas Commission on Environmental Quality (TCEQ) in order to learn more about the modeling assumptions used to quantify emissions from the construction industry. The emissions estimates were developed using the EPA NONROAD model, and TCEQ utilized EPA default data for most model inputs. The EPA defaults were developed based upon extensive industry research, including data from Power Systems Research and a study by Energy and Environmental Analysis, Inc. Rather than assuming maximum activity rates and power output across the industry, the model calculates emissions for different equipment types based upon varying fuel types, ages, activity rates, and load factors. For diesel-powered construction equipment, activity rates range from 0 to 1,641 hours per year, and load factors range from 0.21 to 0.59. Detailed information regarding the specific data utilized in the NONROAD model is available at <http://www.epa.gov/otaq/nonrdmdl.htm>.

TCEQ modified some NONROAD assumptions based upon research conducted by Eastern Research Group (ERG) in August 2005. This study, entitled *Project H43T163: Diesel Construction Equipment Activity and Emissions Estimates for the Dallas/Ft. Worth Region*, utilized industry research and surveys to estimate equipment population and activity. Staff will continue to work with the TCEQ to better understand the modeling of construction emissions in the North Central Texas region.

Respondents indicated that it would be beneficial to have an accurate inventory of construction equipment used in the Dallas/Fort Worth region.

NCTCOG agrees with this comment and will continue to seek opportunities for development of a region-wide or statewide inventory. To date, the most comprehensive, accurate inventory of in-use equipment in the Dallas-Fort Worth area seems to be the ERG study described above. ERG conducted extensive surveys and collected much industry feedback to inform their estimates of both equipment populations and annual activity rates.

NCTCOG staff studied the ERG report and EPA NONROAD model in depth and, based upon this analysis, established region-specific estimates of equipment population, horsepower distribution, annual activity, and age. Staff feels that this effort has enabled a more comprehensive understanding of the total inventory of in-use equipment in the Dallas-Fort Worth nonattainment area. Initial estimates are presented below:

Approximate Population of In-Use Diesel Construction Equipment: 42,330

Population Breakdown by Horsepower		
HP Range	Population	Percent of Fleet
0-25 hp	2,775	6.6%
25-50 hp	4,423	10.4%
50-100 hp	18,983	44.8%
100-175 hp	10,265	24.3%
175-300 hp	3,216	7.6%
300-600 hp	2,187	5.2%
600-750 hp	359	0.8%
over 750 hp	122	0.3%

Population Breakdown by EPA Certification		
Certification Level	Population	Percent of Fleet*
Tier 0 (Uncontrolled)	12,188	28.8%
Tier 1	13,000	30.7%
Tier 2	12,263	29.0%
Tier 3	2,104	5.0%

*Will not total 100% because engine smaller than 25 hp are not regulated

Work to refine inventory estimates and seek additional information regarding the population and activity of in-use construction equipment in the North Central Texas region is ongoing. Staff continues to seek voluntary submission of fleet information from municipalities, counties, companies, or other entities which own nonroad equipment. If you are interested in providing such data, please complete and submit a [Fleet Inventory Form](#).

Additional details will be posted as they become available.

Respondents indicated that enforcement will be a significant concern for a policy that incorporates either a contract specification or preference scheme.

Staff recognizes the importance of enforcement and that some entities have concerns about limited resources. Many [examples of contract specifications](#) are in place across the country, and enforcement mechanisms have often included reporting requirements. Such documentation may be incorporated into the policy as a verification process. Staff will strive to provide technical assistance and support to local governments as appropriate.

Some comments indicated that retrofitting existing equipment is not an option because effective retrofits for nonroad equipment are not available.

NCTCOG recognizes the unique problems faced by nonroad equipment owners seeking to use retrofits that reduce nitrogen oxides (NOx). The Environmental Protection Agency (EPA) maintains a list of all [nonroad retrofit products](#) verified by EPA and/or the California Air Resources Board (CARB). To date, two retrofits have been verified as

achieving a NOx reduction of at least 25%, which allows those products to qualify for Texas Emissions Reduction Plan (TERP) grant funding to offset the cost of upgrades.

In addition, the Texas Environmental Research Consortium (TERC) has made the development of NOx retrofit devices for nonroad diesel engines one of the priorities of the New Technology Research and Development (NTRD) program and has at least four research projects underway that include non-road equipment retrofits. Staff will continue to seek information on cutting-edge technologies and will support verification efforts for promising technologies to ensure a variety of retrofit options for equipment owners.

If equipment owners feel that retrofits are not feasible for their particular fleet, they may want to take advantage of TERP funding for the replacement or repower of older, high-emitting equipment.

Respondents noted that equipment owned by public sector entities is confined to the region, whereas commercially-owned equipment is moved around more for various jobs. Therefore efforts to reduce emissions from construction equipment should be focused on that which is publicly-owned.

Staff agrees that publicly-owned equipment should be included in the policy, as the entirety of the emissions produced by this equipment originates within the North Central Texas region. However, because much public sector work is contracted to private companies, commercially-owned equipment will remain a focus of the policy as well.

Respondents noted that contract preferences may be disallowed by current laws.

Texas Local Government Code Subtitle C, Chapter 271, Section 271.907 states that:

“A governmental agency procuring goods or services may: (1) give preference to goods or services of a vendor that demonstrates that the vendor meets or exceeds any state or federal environmental standards, including voluntary standards, relating to air quality, or (2) require that a vendor demonstrate that the vendor meets or exceeds any state or federal environmental standards, including voluntary standards, relating to air quality.

The preference may be given only if the cost to the governmental agency for the goods or services would not exceed 105 percent of the cost of the goods or services provided by a vendor who does not meet the standards.”

Thus NCTCOG feels that both contract specifications and contract preferences would be allowed so long as the price of the contract fits within the restriction established. This portion of the Local Government Code was adopted by the 78th Legislature in 2003. Bidding preferences based upon this allowance have already been established in Arlington, Dallas, and Fort Worth.

Respondents noted that the Clean Air Act forbids state and local governments from adopting or attempting to enforce emission standards or other requirements. These respondents cited the district court decision in *Engine Manufacturers Association, et al., v. Robert J. Huston, et al.* as further evidence that such measures are prohibited.

NCTCOG agrees that this court case is relevant to the development of a Public Agency Policy for Construction Equipment. Staff will research this case and related items to understand the issues in question and ensure that any proposed action will be consistent with the requirement and limitations set forth under the Clean Air Act.