

**Metro**Los Angeles County
Metropolitan Transportation AuthorityOne Gateway Plaza
Los Angeles, CA 90012-2952213.922.2000 Tel
metro.net**EXECUTIVE MANAGEMENT AND AUDIT COMMITTEE
CONSTRUCTION COMMITTEE
MEASURE R PROJECT DELIVERY COMMITTEE
JUNE 16, 2011****SUBJECT: GREEN CONSTRUCTION POLICY****ACTION: ADOPT GREEN CONSTRUCTION POLICY****RECOMMENDATION**

Adopt the Los Angeles County Metropolitan Transportation Authority (LACMTA) Green Construction Policy.

ISSUE

Expediting the LACMTA's Measure R Initiative through the America Fast Forward Program will reduce overall emissions and get people out of their cars and onto transit sooner. However, the potential to create significant harmful emissions from traffic congestion and those associated with construction activities and existing non-mitigated legacy construction equipment usage remains high. This concern is echoed by the US Environmental Protection Agency (USEPA), the South Coast Air Quality Management District (SCAQMD), and various non-profit environmental organizations in the last few months through comment letters to LACMTA's environmental documents, or in public meetings. Specifically, the USEPA and the SCAQMD have recommended through those forums that the LACMTA either implement best management practices or require the use of cleaner on-road and off-road equipment to mitigate particulate matter (PM) and nitrogen oxide (NO_x) compound emissions.

The development and implementation of a Green Construction Policy was advanced in a motion sponsored by Director Richard Katz and approved by the LACMTA Board of Directors on December 9, 2010. This motion recognizes that reduction of harmful emissions from diesel engines used during construction can significantly reduce the harmful effects of PM, NO_x, and greenhouse gas emissions. An LACMTA Board approved Green Construction Policy will facilitate agency-wide and uniform implementation of cost-effective solutions to this recognized air quality issue.

DISCUSSION

Staff presented a Draft Green Construction Policy during the March 2011 Executive Management and Audit Committee meeting. Additional guidance was given by our Board of Directors during that meeting to ensure the development of a comprehensive policy, consistent with the intent of Director Katz's December 2010 motion and more importantly to the policies, guidelines, or framework of other jurisdictions within our region specifically those of the Port of Los Angeles, Port of Long Beach, and Los Angeles World Airports (LAWA).

Since March, staff had conducted separate meetings with various stakeholders that included non-profit environmental organizations, construction contractors, manufacturers of retrofit equipment; as well as representatives of the South Coast Air Quality Management District, Port of Los Angeles, Port of Long Beach, and Los Angeles World Airports. The meetings were designed not only to develop a more comprehensive LACMTA Green Construction Policy but to gain consensus on language and provisions that should be included in the policy. The Green Construction Policy included in Attachment A has been vetted out and discussed among all stakeholders and represent language that is acceptable to all stakeholders.

When adopted by our Board, this policy complements our Board adopted Environmental Policy that commits to, among other things, operating and maintaining LACMTA vehicles and facilities to minimize negative impacts on the environment; ensure the planning, design, construction, and operation of our facilities and services consider environmental protection and sustainable features; and build relationships with our contractors, vendors, consultants, and transit partners during planning, design, construction, operation and procurement to protect and enhance the environment.

This policy also institutionalizes key air quality mitigation measures prepared through the environmental clearance process for any project at LACMTA. These mitigation measures provide minimum requirements (as indicated in the proposed LACMTA Green Construction Policy's Best Management Practices section) to protect human health and the environment.

Staff's recommendation to adopt this LACMTA Green Construction Policy is in line with the clean construction requirements already existing in New York, Illinois (Cook Co.), and Rhode Island (Providence), among others. Locally, the Port of Los Angeles, Port of Long Beach, and LAWA have already incorporated clean construction requirements into their specifications.

From an informal survey of transit agencies nationwide [through the American Public Transportation Association (APTA)], it appears that only a handful of our peers have considered clean/green construction equipment requirements. There appears to be no transit agency at this time that has adopted such a policy. With the adoption of this policy, we will be the industry leader in the APTA community.

FINANCIAL IMPACT

LAWA and Port of Los Angeles staffs have been implementing clean construction requirements in their construction activities. Specifically to LAWA, they have indicated that the cost to implement these requirements in total, including the labor associated with contractor bid costs, an Independent Third Party Monitor, environmental management contractor staff, plus the cost for retrofitting the off-road construction vehicles with diesel emission control systems, is approximately 0.3% of the overall construction costs on one of their \$150 million projects. In LAWA staff's opinion, the costs to do the same level of effort would conservatively be around 0.5% on a typical construction project.

The Contractor or equipment owner (in cases where construction equipment is leased) is responsible for all costs of purchase, installation, and maintenance of retrofit device or any new construction equipment required by the policy. The Contractor shall also be responsible for any compliance costs to be incurred by any of their subcontractors. Finally, no Contractor shall be given a competitive advantage or disadvantage as a result of the policy. Costs for complying with the policy shall not be considered by LACMTA in evaluating bids.

As indicated in the policy, the LACMTA will provide information to the Contractor and their subcontractors in identifying and applying for grants and loans that are available for the greening of existing construction equipment or purchase of new green construction equipment.

ALTERNATIVES CONSIDERED

Rejection of the recommended Board action is inconsistent with the intent of the Board approved motion to develop this policy. Rejection of the staff recommendation is also inconsistent with the provisions of our Board adopted Environmental Policy that specifically commits to specific actions in mitigating environmental and human health impacts, while maintaining sustainable operations.

NEXT STEPS

After the proposed Green Construction Policy is adopted by the LACMTA Board, staff will incorporate the requirements of this policy in all future procurement contracts. It is not retroactive. Staff will encourage Contractors of existing construction projects to implement the provisions of this policy to the greatest extent feasible. Finally, staff will work with air quality management agencies such as the SCAQMD and the California Air Resources Board in setting up the enforcement guidelines of the policy.

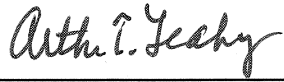
ATTACHMENT

A. Green Construction Policy

Prepared by: Cris B. Liban, Environmental Compliance and Services Department
Manager



Krishniah N. Murthy
Executive Director, Project Transit Delivery



Arthur T. Leahy
Chief Executive Officer

LACMTA GREEN CONSTRUCTION POLICY

POLICY STATEMENT

The Los Angeles County Metropolitan Transportation Authority (LACMTA) will only use greener, less polluting construction equipment and vehicles; and implement best practices to meet or exceed air quality emission standards in all construction projects funded entirely or in part by the LACMTA or performed on LACMTA property.

PURPOSE

This policy provides requirements for 1) identifying and mitigating air emission impacts on human health, environment, and climate of on-road and off-road construction equipment and generators used in our construction and development activities; 2) implementing appropriate Best Management Practices (BMP) to complement equipment mitigations; and 3) implementing strategies to ensure compliance with this policy.

This policy is effective and enforceable immediately upon adoption for all new construction projects. This policy will not be retroactive. However, for all existing construction projects [i.e., where contracts have already been awarded], LACMTA will encourage all Contractors to implement the provisions of this policy to the greatest extent feasible. The intent of this policy is to reduce harmful air emissions (particularly particulate matter and nitrogen oxides) while minimizing any significant impact to cost and schedule in any existing construction project. Nothing in this policy shall require a retrofit that does not meet California OSHA standards.

COMMITMENTS

The LACMTA is an international leader in implementing environmental and sustainability principles in all of its planning, construction, operations, and procurement activities. The LACMTA commits to the following construction equipment requirements, construction BMPs, and implementation strategies for all of its construction projects funded entirely or in part by the LACMTA or performed on LACMTA property.

The LACMTA will work with other agencies such as the California Air Resources Board (CARB) and the South Coast Air Quality Management District (SCAQMD) in the implementation of this policy. Where the construction activity is to be performed outside of SCAQMD jurisdiction but within Los Angeles County, the LACMTA will work through the most appropriate air quality management jurisdiction such as the Antelope Valley Air Quality Management District (AVAQMD) regarding the most appropriate applicable inter-jurisdiction air quality district provisions of this policy.

CONSTRUCTION EQUIPMENT

Through this Green Construction policy, the LACMTA commits to ensuring that all of the on-road and off-road equipment used in its construction activities are green and less-polluting as follows:

Construction Equipment (excluding On-Road Equipment)

- 1) Construction equipment shall incorporate, where feasible, emissions-reducing technology such as hybrid drives and specific fuel economy standards.
- 2) Idling shall be restricted to a maximum of 5 minutes, except as provided in the exceptions to the applicable CARB regulations regarding idling.
- 3) Equipment Engine Specifications:
 - a. ***Prior to December 31, 2011:*** All off-road diesel-powered construction equipment greater than 50 horsepower (hp) shall meet Tier-2 off-road emission standards at a minimum. In addition, all construction equipment greater than 50 hp shall be retrofitted with a CARB-verified Level 3 Diesel Emissions Control Device system (DECS).
 - b. ***From January 1, 2012, to December 31, 2014:*** All off-road diesel-powered construction equipment greater than 50 hp shall meet Tier-3 off-road emission standards at a minimum. In addition, all construction equipment greater than 50 hp shall be retrofitted with a CARB-verified Level 3 DECS. Any emissions control device used by the Contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations.
 - c. ***From January 1, 2015 and onwards:*** All off-road diesel-powered construction equipment greater than 50 hp shall meet Tier-4 off-road emission standards at a minimum. In addition, if not already supplied with a factory-equipped diesel particulate filter, all construction equipment shall be outfitted with Best Available Control Technology (BACT) devices certified by CARB. Any emissions control device used by the Contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations.

On-Road Equipment

- 1) Trucks or equipment hauling material such as debris or any fill material shall be fully covered while operating at, to and from the LACMTA construction project.
- 2) Idling shall be restricted to a maximum of 5 minutes, except as provided in the exceptions to the applicable CARB regulations regarding idling.
- 3) EPA Standards:
 - a) **Prior to December 31, 2013:** All on-road heavy-duty diesel trucks or equipment with a gross vehicle weight rating (GVWR) of 19,500 pounds or greater shall meet or exceed the EPA 2007 on-road emission standards for PM10 (0.01 g/bhp-hr); or shall be equipped with a CARB verified Level 3 diesel particulate filter.
 - b) **From January 1, 2014 and onwards:** All on-road heavy-duty diesel trucks or equipment with a GVWR of 19,500 pounds or greater shall comply with EPA 2007 on-road emission standards for PM10 and NO_x (0.01 g/bhp-hr and at least 1.2 g/bhp-hr, respectively).

Generators

Every effort shall be made to utilize grid-based electric power at any construction site, where feasible. Where access to the power grid is not available, on-site generators must:

- 1) Meet a 0.01 gram per brake-horsepower-hour standard for PM, or
- 2) Be equipped with BACT for PM emissions reductions.

Exceptions

These on-road and off-road construction equipment and generator requirements shall apply unless any of the following circumstances exist and the Contractor provides a written finding consistent with project contract requirements that:

- 1) The Contractor intends to meet the requirements of this policy as to a particular vehicle or piece of equipment by leasing or short-term rental, and the Contractor has attempted in good faith and due diligence to lease the vehicle or equipment that would comply with this policy, but that vehicle or equipment is not available for lease or short-term rental within 200 miles of the project site, and the Contractor has submitted documentation to LACMTA showing that the requirements of this Exception provision apply.

- 2) The Contractor has been awarded funding by SCAQMD or another agency that would provide some or all of the cost to retrofit, repower, or purchase a piece of equipment or vehicle, but the funding has not yet been provided due to circumstances beyond the Contractor's control, and the Contractor has attempted in good faith and due diligence to lease or short-term rent the equipment or vehicle that would comply with this policy, but that equipment or vehicle is not available for lease or short-term rental within 200 miles of the project site, and the Contractor has submitted documentation to LACMTA showing that the requirements of this Exception provision apply.
- 3) Contractor has ordered a piece of equipment or vehicle to be used on the construction project in compliance with this policy at least 60 days before that equipment or vehicle is needed at the project site, but that equipment or vehicle has not yet arrived due to circumstances beyond the Contractor's control, and the Contractor has attempted in good faith and due diligence to lease or short-term rent a piece of equipment or vehicle to meet the requirements of this policy, but that equipment or vehicle is not available for lease or short-term rental within 200 miles of the project, and the Contractor has submitted documentation to LACMTA showing that the requirements of this Exception provision apply.
- 4) Construction-related diesel equipment or vehicle will be used on an LACMTA or LACMTA-funded construction project site for fewer than 10 calendar days per calendar year. The Contractor shall not consecutively use different equipment or vehicles that perform the same or a substantially similar function in an attempt to use this Exception to circumvent the intent of this policy.

In any of the situations described above, the Contractor shall provide the next cleanest piece of equipment or vehicle as provided by the step down schedules in Table A for Off-Road Equipment and Table B for On-Road Equipment.

Table A. Off-Road Compliance Step Down Schedule*		
<i>Compliance Alternative</i>	<i>Engine Standard</i>	<i>CARB-verified DECS (VDECS)</i>
1	Tier 4	N/A**
2	Tier 3	Level 3
3	Tier 2	Level 3
4	Tier 1	Level 3
5	Tier 2	Level 2
6	Tier 2	Level 1
7	Tier 2	Uncontrolled
8	Tier 1	Level 2

Equipment less than Tier 1, Level 2 shall not be permitted.

Table B. On-Road Compliance Step Down Schedule*

Compliance Alternative	Engine Model Year	CARB-Verified DECS (VDECS)
1	2010	N/A
2	2007	N/A**
3	2004	Level 3
4	1998	Level 3
5	2004	Uncontrolled
6	1998	Uncontrolled

Equipment with a model year earlier than Model Year 1998 shall not be permitted.

***How to use Table A and Table B:** For example, if Compliance Alternative #3 is required by this policy but a Contractor cannot obtain an off-road vehicle that meets the Tier 2 engine standard that is equipped with a Level 3 DECS (Compliance Alternative #3 in Table A) and meets one of the above exceptions, then the Contractor shall use a vehicle that meets the next compliance alternative (Compliance Alternative #4) which is a Tier 1 engine standard equipped with a Level 3 DECS. Should the Contractor not be able to supply a vehicle with a Tier 1 engine equipped with a Level 3 DECS in accordance with Compliance Alternative #4 and has satisfied the requirements of one of the above exceptions as to the Contractor's ability to obtain a vehicle meeting Compliance Alternative #4, the Contractor shall then supply a vehicle meeting the next compliance alternative (Compliance Alternative #5), and so on. If the Contractor is proposing an exemption for on-road equipment, the step down schedule in Table B should be used. A Contractor must demonstrate that it has satisfied one of the exceptions listed in the selected Compliance Alternative # before it can use a subsequent Compliance Alternative. The goal is to ensure that the Contractor has exercised due diligence in supplying the cleanest fleet available.

**Tier 4 or 2007 Model Year equipment not already supplied with a factory-equipped diesel particulate filter shall be outfitted with Level 3 VDECS.

BEST MANAGEMENT PRACTICES

In addition to equipment requirements, the Best Management Practices (BMPs) listed below are imposed on all construction projects that are fully or partially funded by LACMTA or performed on LACMTA property. LACMTA may also require additional BMPs that are based on BACT guidelines and that may also include changes to construction practices and design to reduce or eliminate human health, environmental, and climate change impacts.

BMPs shall include, at a minimum:

- 1) Use of diesel particulate traps or best available control technology, as feasible;
- 2) Maintain equipment according to manufacturers' specifications;
- 3) Restrict idling of construction equipment and on-road heavy-duty trucks to a maximum of 5 minutes when not in use, except as provided in the exceptions

to the applicable CARB regulations regarding idling for off-road and on-road equipment;

- 4) Maintain a buffer zone that is a minimum of 1,000 feet between truck traffic and sensitive receptors, where feasible;
- 5) Where applicable, work with local jurisdictions to improve traffic flow by signal synchronization;
- 6) Configure construction parking to minimize traffic interference;
- 7) Enforce truck parking restrictions, where applicable;
- 8) Prepare haul routes that minimize traversing through congested streets or near sensitive receptor areas;
- 9) Provide dedicated turn lanes for movement of construction trucks and equipment on- and off-site, as feasible;
- 10) Schedule construction activities that affect traffic flow on the arterial system to off-peak hours to the extent practicable;
- 11) Use electric power in lieu of diesel power where available; and
- 12) Traffic speeds on all unpaved roads to be 15 mph or less.

IMPLEMENTATION

The following shall be incorporated to ensure proper compliance with this policy.

Notification

Contractors of construction activities that are located within 1,000 feet of sensitive receptors shall notify each of these sites in writing at least 30 days before construction activities begin. Notification shall include the name of the project, a description of the location, the acreage of the construction site, the type and quantity of equipment and vehicles that will be operating at or near the site, the start date and reasonably anticipated duration of the construction, any special considerations such as contaminated waste removal or other hazards, and contact information for a community liaison who can answer any questions.

Enforcement

Each solicitation by LACMTA for a construction project contract, each solicitation for a construction project funded entirely or in part by funds programmed by the LACMTA, and each contract entered into as a result of such solicitation, and

each agreement for funding, shall include provisions authorizing enforcement of the requirements of this policy.

Violations of any of the requirements of this policy shall be deemed to be a material breach of the Contractor agreement, and LACMTA shall have available all remedies including warnings, fines, requirement to remove equipment, institution of special assessments, and termination of contract.

LACMTA shall work with the SCAQMD (or another air quality district jurisdiction if outside of SCAQMD jurisdiction but within Los Angeles County) for the inspection of construction sites and affected off-road and on-road equipment and generator as well as compliance with air quality district rules. These inspections will be conducted without advance notice to the Contractor, and will monitor the Contractor's compliance with the requirements of this policy and with appropriate air quality district rules.

Records

Prior to Notice to Proceed (NTP) to commence construction project and to be verified afterwards consistent with project contract requirements and through enforcement provisions above, the Contractor shall submit to LACMTA the following information for all construction equipment to be used in all construction projects funded entirely or in part by the LACMTA or performed on LACMTA property:

- 1) A certified statement that all construction equipment used conform to the requirements specified above;
- 2) A list of all the equipment and vehicles [i.e., for off-road equipment, include the CARB-issued Equipment Identification Number (EIN)] to be used;
- 3) A copy of each Contractor's certified EPA rating and applicable paperwork issued either by CARB, SCAQMD and any other jurisdiction that has oversight over the equipment; and
- 4) The name, business address, e-mail address, and phone number for the individual person responsible for each of the pieces of equipment and vehicles subject to this policy.

If an unanticipated need for the use of equipment or a vehicle arises after construction has commenced or after the Contractor has submitted the information required by the above subsections (1)–(4), the Contractor shall provide such information for the unanticipated equipment or vehicle within 14 days after an identified emergency or when the need arises and prior to the use of the equipment or vehicle.

Quantification and Reporting of Emission Reductions

No later than 18 months after the date the LACMTA Board of Directors adopts this policy, and annually thereafter, LACMTA shall develop a summary report presented to the Board and available on the LACMTA website which shall include:

- 1) A description of the implementation of this policy;
- 2) Quantification of the resulting PM and NO_x emission reductions;
- 3) A list and description of monitoring and enforcement actions;
- 4) A description of other appropriate measures of progress;
- 5) A description of problems encountered and opportunities for additional reductions in emissions; and
- 6) Recommendations for any statutory or policy changes.

Implementation and Compliance Costs

The Contractor or equipment or vehicle owner (in cases where the equipment or vehicle is leased) is responsible for all costs of purchase, installation, and maintenance of retrofit devices or any new construction equipment required by this policy. The Contractor shall also be responsible for any compliance costs to be incurred by any of their subcontractors.

The LACMTA will provide information to the Contractor and their subcontractors to aid in the identification of and application for grants and loans that are available for the retrofit or repower of existing construction equipment or purchase of new green construction equipment.

No Contractor shall be given a competitive advantage or disadvantage as a result of this policy. Costs for complying with this policy is a part of the Contractor's bid and will not have any consideration in evaluating bids.

DEFINITIONS

Best Available Control Technology (BACT) is defined as technology, verified by CARB, for an off-road vehicle that achieves reductions in PM emissions at the highest applicable classification level for diesel emission control strategies. A summary of CARB-verified diesel emission control strategies may be found at <http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm>. Where this policy requires BACT,

this requirement can be satisfied by a factory installed equivalent device, such as a diesel particulate filter.

Classification Levels are defined as levels of diesel emission control retrofit technologies, with Level 3 being the highest classification level, and the only level acceptable for a retrofit under this policy, except as provided for in this policy:

- Level 3 is defined as retrofit technology that reduces diesel PM emissions by 85 percent or greater or reduces engine emissions to less than or equal to 0.01 grams diesel PM per brake horsepower-hour;
- Level 2 is defined as retrofit technology that reduces diesel PM emissions by between 50 and 84 percent;
- Level 1 is defined as retrofit technology that reduces diesel PM emissions by between 25 and 49 percent.

Construction Project is defined as a project that is funded entirely or in part by funds programmed by LACMTA or performed on LACMTA property. If the project is performed in collaboration with another agency or agencies or parties, including where the other agency or agencies or parties have the lead responsibility for construction, this Green Construction Policy shall be incorporated into all agreements, including Memoranda of Understanding, between LACMTA and the other agency or agencies or parties, so that this Green Construction Policy shall apply to even those projects that LACMTA funds, in whole or in part, that are performed in conjunction with another agency or agencies or parties.

Sensitive Receptor Site is defined as a site that is within the definition provided in the CARB Air Quality and Land Use Planning Guidelines (2005) (www.arb.ca.gov/ch/landuse.htm) such as schools, daycares, playgrounds, and hospitals.