

Profile



*Metro is a unique agency.
It functions as:*

- **Transit operator,**
- **Transportation planner,**
- **Transportation infrastructure builder,**
- **Overseer of all transportation funding in Los Angeles County.**

Metro's system includes (March 2010):

- **Metro Rail** – 17 miles of heavy rail, 62 miles of light rail, 14 miles of dedicated busway with about 14.5 miles of additional light rails opening in the next 3 years.
- **Metro Bus** – total of 2,635 buses (approximately 95% of which is run on compressed natural gas) plus over one dozen municipal bus companies.
- **Commuter Rail** – (as funding partner to Metrolink) 512 miles serving regional commuters.
- **HOV Lanes** – High Occupancy Vehicle lanes for carpools, vanpools and express buses.
- **Metro Access** - Dial-a-ride services for the elderly and disabled.
- **Metro FSP** - Freeway Service Patrol, a system of contracted tow trucks for servicing disabled vehicles on the freeways.
- **Call Boxes** - A countywide system of cellular call-boxes for emergency use in the freeway and highway system.
- **Bikeways** - A system of bikeways for commuter and recreational purposes in L.A. County.
- **Smart Streets** - Synchronized signals, ramp metering and communication in order to keep traffic flowing.
- **Transportation Demand Management (TDM)** - includes rideshare, flexible work hours telecommunicating & transit voucher programs.
- **Pedestrian Program** - A countywide program that allocates resources to build and sustain pedestrian access to the transit system.
- **Transportation Enhancement Program** - A countywide program that allocates resources to improve transportation infrastructure to maximize infrastructure and improve transportation connectivity.
- **Regional Integration of Intelligent Transportation Systems (ITS)** - A countywide program that allocates resources and coordinates integration of technology and communication systems to maximize travel efficiency on highways and streets.

A 14-member Board of Directors, 13 locally elected officials and 1 Ex- Officio appointed by the Governor of California oversee Metro. In 2010, Metro has about 9,300 full-time employees. The FY 2010 budget was \$3.9 billion.

Formed in 1993, Metro serves a population of approximately 10 million people in all of Los Angeles County through its growing bus and rail system. Metro operates the second largest bus system in the nation and has the largest compressed natural gas (CNG) powered bus fleet in the nation. The system also includes five fixed guideways: four are rail and one dedicated busway. As of March 2010, average bus and rail weekday boardings are estimated to be 1,445,340.

In addition to bus and rail facilities, Metro also operates 425 lane miles of carpool lanes, 520 miles of bike routes, 481 miles of bike lanes, and 251 miles of bike paths. We also operate the Metro Freeway Service Patrol that has a total fleet of 152 tow trucks on patrol serving 450 miles of freeway. On average, the FSP assists 25,000 motorists per month.

Fenceline

The Red Line Yard is located at 320 S. Santa Fe Street, Los Angeles, CA 90012. The facility sits on a 39 acre site (50% impervious). It services 104 rail cars and has about 500 employees working in all of the facilities.

The Red Line Yard consists of the Division 20 main shop building and warehouse building, Maintenance of Way Buildings A & B, cleaning station, train car wash, and a traction and power compound. Division 20 is Metro's Red Line Subway Railcar



Maintenance yard. Industrial activities involving the electric train maintenance and vehicle maintenance operations are conducted within the main shop and maintenance buildings, respectively (indoors). The outdoor portions of the site are used for electric train rail lines and vehicle parking.

Non-revenue vehicle operations located at the northwest corner of the Maintenance of Way Building B is not part of the fenceline. However, for practical purposes, this portion of the Red Line Yard will be evaluated for and will be maintained to comply with environmental regulations.

Core Team

The Core Team was initially made up of five members representing various business units. Since then, the Core Team has expanded to a total of twenty members. The new members come from business units that 1) were being impacted by the highest prioritized significant aspects and 2) from departments that supported the development of the EMS (i.e., Procurement, Organizational Development and Training, Communications and Marketing).

Key Drivers for Adopting an EMS

Metro is responsible for complying with environmental laws and regulations that are enforced by federal, state and local environmental agencies. They include (among others)

- Resource Conservation and Recovery Act;
- Hazardous and Solid Waste Amendments Act;
- Clean Water Act;
- Clean Air Act;
- Code of Federal Regulations, Title 49;
- Code of Federal Regulations, Title 40;
- Code of Federal Regulations, Title 29;
- California Hazardous Waste Control Laws;
- California Health and Safety Code, Division 20;
- California Code of Regulations, Title 22, Division 4.5;
- California Code of Regulations, Title 23;
- California Code of regulations, Title 8, section 5192 – Emergency Response to Hazardous Materials;
- California Health and Safety Code, Chapter 6.95, section 25500 et al – Hazardous Materials Business Plan; and
- South Coast Air Quality Management District (AQMD) rules.

Metro also complies with other key regulatory guidelines that pertain to specific key issues associated with the identified aspects. The above and other regulations including their applicability are listed in the Red Line Yard EMS Procedures under Legal and Other Requirements.

Metro is in the forefront of environmental responsibility. We pride ourselves in running the largest compressed natural gas bus fleet in the nation. We have incorporated sustainability design elements in the construction of our Division 3 Maintenance Building, our Division 9 Transportation Center and the Metro Orange Line dedicated busway. We have included “sustainability” as a criterion in our Call for Projects program. The objective would be to optimize the transportation services in a corridor to increase person and goods throughput, safety, and security while reducing energy, motorized Vehicle Miles Traveled (VMT) and greenhouse gas emissions (GHGe). **We have publicly committed to ensuring the inclusion of sustainability principles on projects to be constructed under new funding mechanisms such as Measure R and the American Recovery and Reinvestment Act.**



Measure R is a half-cent sales tax for Los Angeles County that will finance new transportation projects and programs, and accelerate many of those already in the pipeline – everything from new rail and/or bus rapid transit projects, commuter rail improvements, Metro Rail system improvements, highway projects, improved countywide and local bus operations and local city sponsored transportation improvements. The measure passed in the November 2008 election and the tax took effect in July 2009.

Measure R is expected to generate approximately \$40 billion in new local sales tax revenues over the 30 year term of the measure. It is estimated that about \$20 billion of construction projects, which will be mostly funded by Measure R, will require mandated environmental reviews (per California Environmental Quality Act).

Metro's bus and rail fleets facilities face unique environmental challenges related to construction, upgrades and maintenance. These challenges include procedural standardizations; hazardous materials and waste management; recycling programs; mobile and non-mobile emissions reductions; underground storage tank upgrades and repairs; soil and groundwater remediation programs; stormwater compliance and training; noise and vibration mitigation; and environmental impact assessments.

Metro's participation in the FTA EMS Training and Assistance Program reinforces our ability to implement mitigation measures and compliance to accomplish desired results.

Metro is a leader in creating opportunities for energy efficiency and pollution prevention and mitigation. Through this opportunity, we built a robust Environmental Management System (EMS) to capture and implement our environmental compliance and mitigation best practices. We are seeking ISO14001 certification. The templates we created in this pilot effort will be used in an agency-wide EMS roll-out. The EMS will provide an effective framework to proactively address environmental issues and create cost-effective operations that enhances our employee's skills while maintaining our commitment to environmental stewardship.

EMS as a principle is now used in the development of projects and studies associated with our Sustainability Program. We are incorporating EMS in our methodologies for addressing climate change issues. In this context, while we have focused on developing EMS for the Red Line Yard, the benefits we get from this effort go beyond those of the fenceline. We indicate these specific benefits and accomplishments below.

Significant Aspects and Impacts

The Core Team identified six distinct areas of Significant Aspects: Fueling, Cleaning, Rail Car Overhauls/Repairs, System Material Storage and Pesticide & Weed Control. Within these areas, a total of 80 activities were evaluated by the Core Team and Division 20 management staff. Each activity was ranked in ten categories of "Significance of Impact" on a scale of 1 to 5 (5 being the highest impact). The activity categories were:

- Scale or size of aspect
- Severity of impact
- Probability of occurrence
- Duration of impact
- Potential legal and regulatory exposure
- Ease of implementing change
- Public Image impact
- Affect on sustainability
- Relational and cultural change
- Cost of change

Ranking these aspects (higher ranking=higher impact) helped us to determine that the following five significant aspects will be our highest priority items at the fenceline.

Underground Storage Tank – Aspect Ranking = 70

- Diesel Fuel for Back-up generator
- Testing/Certification of UST Systems and components
- Monitoring of leak detection monitoring system
- Inspection of emergency generator



Wastewater/Stormwater Management – Aspect Ranking = 63



- Wastewater Treatment. Process and activities linked with wastewater treatment and neutralization
- Spill/Leak Prevention. Spill and leak at the acid wash and clarifiers
- Rain Water Runoff. Manhole or drainage protection from shop & yard activity wastewater



Rail Car Wash Cleaning – Aspect Ranking = 58

- Automatic acid car wash to clean stainless steel revenue cars



Batteries Management – Aspect Ranking = 54

- Replacement and disposal of waste batteries
- Establish consolidation points



Above Ground Storage Tanks – Aspect Ranking = 52

- Amber fuel for non-revenue hi-rail trucks
- Diesel fuel for maintenance shop emergency generator
- Inspection of emergency generator

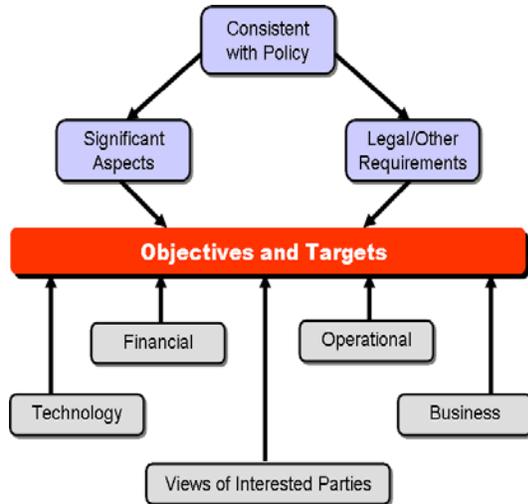


Objectives and Targets

One of Metro's main strategic goals (Goal #9) is to "Sustain the environment with efficiency and reduce greenhouse gas emission." With this strategic goal in mind, an environmental policy was developed to reflect our commitment to an EMS. In summary, the environmental policy stipulates the following goals:

1. Identify potential environmental impacts generated by our development activities and develop mitigation measures to address those impacts;
2. Operate and maintain Metro vehicles and facilities to minimize negative impacts on the environment;
3. Reduce our consumption of natural resources;
4. Reduce or eliminate the use of hazardous materials;
5. Increase the amount of recycling and use of recycled products; and
6. Reduce and/or divert the amount of solid waste going to landfills.

The objective and targets were to be consistent with our Environmental Policy and to meet legal and regulatory requirements.



Additionally, the five selected significant aspect items were further evaluated by the Core Team to establish specific plans of action.

The objectives and targets took into account:

- Technology requirements
- Financial considerations
- Views of interested parties
- Operational impacts
- Business issues

The team developed these objectives and targets for the five significant aspects.

► Underground Storage Tank

Objective – Prevent or mitigate diesel fuel spillage

Target – Review and implement UST Monitoring System Plan. Prevent the amount of diesel fuel spillage by June 30, 2010

Action Plan

- Conduct baseline review to determine spill losses.
- Review UST Monitoring System Plan.
- Evaluate spill potential and review findings with EMS Aspects team.
- Begin awareness and operational training.
- Evaluate work instructions and prepare standard operating procedures.
- Review SPCC Plan and perform tank testing annually.
- Prepare annual progress report for Management Review.
- Perform inspection of emergency generator.

► Wastewater/Stormwater Management

Objective – Prevent uncontrolled release of untreated waste water, chemicals, and untreated stormwater.

Target – Prevent the uncontrolled release of untreated waste water, chemicals, and untreated stormwater by June 30, 2010

Action Plan

- Review and update SOPs, SWPPP, and other relevant documents.
- Evaluate uncontrolled release potential and exposure to employees.
- Review findings with EMS Aspects team.
- Inspect potential for uncontrolled wastewater release and exposure monthly.
- Begin awareness and operational training.
- Evaluate work instructions and prepare standard operating procedures.
- Inspect integrity of physical/operational controls monthly.
- Prepare annual progress report for Management Review.

► **Rail Car Wash Cleaning**

Objective – Prevent the uncontrolled release of carwash wastewater into the environment and exposure of facility employees

Target – Prevent the uncontrolled release of acid carwash wastewater by June 30, 2010

Action Plan

- Review acid carwash procedure and determine baseline amount.
- Evaluate uncontrolled release potential and exposure of employees.
- Review findings with EMS Aspects team.
- Inspect monthly potential for uncontrolled wastewater release and exposure.
- Begin awareness and operational training.
- Evaluate work instructions and prepare standard operating procedures.
- Evaluate feasibility of replacing acid car wash facility.
- Weekly monitoring and calibration of sensors.
- Prepare annual progress report for Management Review.

► **Batteries Management**

Objective – Prevent the inappropriate disposal of batteries

Target – Reduce to 0% the amount of inappropriately disposed batteries by June 30, 2010

Action Plan

- Establish battery generation baseline.
- Evaluate each battery generation stream for 100% diversion.
- Begin awareness and operational training.
- Evaluate work instructions and prepare standard operating procedures.
- Measure batteries generation to track progress quarterly.
- Prepare annual progress report for Management Review.

► **Above Ground Storage Tank [Including the Maintenance Shop Emergency Generator AST]**

Objective – Prevent the uncontrolled release and eliminate fuel spillage

Target – Review and implement SPCC Plan. Reduce the amount of amber fuel spillage through assessment of environmental release vectors and make repairs and upgrades by June 30, 2010

Action Plan

- Review SPCC Plan.
- Review baseline amber fuel delivery, storage, and fueling processes.
- Evaluate spill potential and review findings with EMS Aspects team.
- Begin awareness and operational training.
- Evaluate work instructions and prepare standard operating procedures.
- Inspect integrity of amber fuel tank and berm monthly.
- Review SPCC Plan and perform tank testing annually.

- Prepare annual progress report for Management Review.
- Perform inspections of emergency generator.

Benefits of Adopting an EMS

- The EMS process allowed for a better understanding of **what personnel within the Red Line Yard are doing and how processes are implemented**. We also gained an understanding of which processes and activities need to be documented and the importance of such documentation.
- Development of Standard Operating Procedures (SOP) allowed for us to systematically address the environmental issues like those associated with the proper management of waste batteries for the rail cars and all other stationary power sources. This exercise also **allowed us to develop new SOPs and update existing procedures**.
- The Emergency Response exercises conducted twice highlighted **awareness of the agency's emergency response limitations**. While documents are in place, it appears that we still have specific coordination issues that need to be resolved in order for us to be more responsive in real emergencies in the future. The corrective actions to be taken regarding coordination and procedures are not only anticipated to save time and money in case of an actual emergency, but also will improve the mitigation of the emergency.
- The EMS process exposed a need for proper document management **to better monitor the Rail Operation Division's documents and understand how each document relates** to the physical Red Line Yard procedures and other site documents.
- Setting Targets and Objectives in this process has aided us in **clearly defining our expectations**.
- Our Senior Management meetings opened everyone's eyes to the benefits of EMS in an organization as complex as Metro. We are **better able to understand the roles and responsibilities of all stakeholders** and have re-discovered that we are indeed one Metro.
- We are able to fully **appreciate our environmental policy** especially during the development of the Red Line Yard Targets and Objectives.
- By expanding our internal Metro team, we are able to meet new personnel within our agency that we may not have had the chance to work with if not for the EMS. We are better **able to leverage the power of working together**; that nothing is impossible as long as our stakeholders are well informed of the purpose and intent of our actions.
- The EMS process has now become endemic in the development, implementation, and operations of our Sustainability Program projects. Staff has been empowered and been challenged to ask questions of how we can **improve our systems and implement small changes that, because of Metro's size, collectively would provide significant cost-savings to our agency**.

Accomplishments to Date and Cost Savings

Metro is currently developing several solutions associated with our significant aspects. As our processes in our other facilities have some similarity to our fenceline, the solutions we are developing and the projected cost savings are being considered for implementation agency-wide. The template we are developing at the Red Line Yard is of significant value in the agency-wide roll-out of EMS.

Through our environmental compliance efforts, we anticipate avoiding a minimum of \$5,000 per day in cost-avoidance costs (fines and violations costs). Cost avoidance benefits are directly associated with our Above Ground and Underground Storage Tank and Wastewater/Stormwater Management Aspects.

We are in the process of completing the development of an Environmental Information Management System (EIMS) that will house all of our environmental and energy/utility information. Specifically related to our storage tank and Material Safety Data Sheet information, we will **save our agency** approximately **\$50,000 per year in labor costs**. This cost is associated with monitoring and information update in the Red Line Yard and all other divisions. We anticipate this savings to grow as we build more modules into the EIMS.

The EMS has facilitated the strengthening of our existing programs that include:

- Monthly environmental inspection and reporting;
- Stormwater and wastewater programs;
- Underground and aboveground storage program;
- Battery and Universal Waste Disposal; and
- Recycling Program.

We have also developed multi-media training tools that we are now using in our Sustainability Awareness Training and Environmental Management System Awareness Training efforts. Our Sustainability Awareness Training was recognized with the 2009 National Model Program by the National Transit Institute (NTI). The recognition has given significant credibility to the EMS training modules we have developed and continue to develop, serving as a template for others in the nation to follow.

We have produced an EMS Awareness Video that emphasizes the practicability of EMS principles and their usefulness for maintaining environmental stewardship at work and at home.

We have incorporated EMS principles in our contract documents, design criteria, and our specifications.

EMS has brought indirect benefits as a result of a changing culture in our agency. We are currently completing three documents that were spurred by the awareness brought about by the development of this EMS. These include:

- *Evaluation of Strategies to Reduce Greenhouse Gas Emissions* study that looks at the whole universe of strategies for us to implement the “lowest hanging fruit” strategies that have low cost/high rate of return characteristics for reducing our carbon footprint.
- *Water Action Plan* that identifies water conservation and reduction strategies to reduce Metro’s water operations cost. This plan has direct impact to the Car Wash significant aspect and on how we will be operating our car washes in the future.
- *2010 LACMTA Sustainability Report* that includes a discussion of the aspects identified in our fenceline and the rest of Metro. The report also includes a discussion of our progress on 10 indicators as well as proposed sustainability-related goals.

We are about to embark on developing an Energy Conservation and Management Plan.

Capital and operational enhancement projects identified in these documents are anticipated to not only provide an avenue for enhanced compliance, but also potentially generate revenue and cost savings. These include those related to utility and resource conservation, recycling, and similar attributes.

Our FY10 EMS budget is approximately \$655,000. As we have demonstrated, the benefits are enormous. **We estimate that the potential direct and indirect benefit and cost-savings to our agency for the implementation of EMS in our fenceline [and EMS principles across our facilities] initially amount to \$2 million.** The three major components of these benefits are associated with energy and utility savings and cost avoidance. These benefits and cost-savings will be verified in the forthcoming fiscal year.

Next Steps

Our next steps are modest. We aim to:

- Increase awareness of the use of EMS and its principles to the entire Metro organization;
- Continue development and implementation of policies and procedures related to the EMS;
- Develop and maintain better recordkeeping mechanisms; and
- Establish the EMS and Sustainability projects as part of the annual Metro budget completely paid for by cost-savings generated from the implementation of these projects.

Management Commitment

- On April 16, 2009, the Metro Board approved the Environmental Policy which formalizes Metro's *"commitment to protecting the environment using sustainable principles and practices in our Planning, Construction, Operations, and Procurement Departments. This policy illustrates our leadership in maximizing our environmental efforts and its benefits for Los Angeles County through transportation."*
- Senior staff embraces the EMS program but there is lingering concern about cost because of a structural deficit the agency is facing.
- Senior Management has been actively involved in our discussions. Our regular Core Team meetings include briefings to our Deputy Chief Capital Management Officer who communicates any issues to fellow executives, including the CEO. The Chief Operations Officer has attended our Management Review meetings.
- The Deputy Chief Capital Management Officer and our Environmental Compliance and Services Department Manager report to our Ad Hoc Sustainability and Climate Change Committee regarding any efforts related to the EMS. Ad Hoc Sustainability and Climate Change Committee members consist of Metro Board Members.
- The EMS Core Team commits to a semi-annual meeting with Executive Staff to update them of EMS related issues and solutions.



"Really all MTA employees are and should be involved in this [EMS], not just because it is our duty as citizens to improve things, but also because it is our duty as employees. So we really need to work together to make a contribution to improving Los Angeles and improving the environment. That's why we have EMS. "

- Arthur T. Leahy, CEO, Los Angeles County Metropolitan Transportation Authority

Los Angeles County Metropolitan Transportation Authority Audit Report

This Environmental Management System (EMS) Audit was based on a request by the Federal Transit Administration (FTA) as a final follow-up to an eighteen month program for EMS development and was conducted in accordance with the approved schedule.

W. Robert Herbert, Principle Contractor and ISO 14001 certified Lead Auditor with Virginia Tech, conducted the EMS Audit for the Los Angeles County Metropolitan Transportation Authority on July 15 and 16, 2010, to report on its conformance with the requirements of the ISO 14001:2004 standard.

The EMS was evaluated against each of the requirements set out in the ISO 14001:2004 standard titled “Environmental management system – General guidelines on principals, systems and support techniques.” The Audit included the examination of documents, interviews of personnel and observations of activities and conditions.

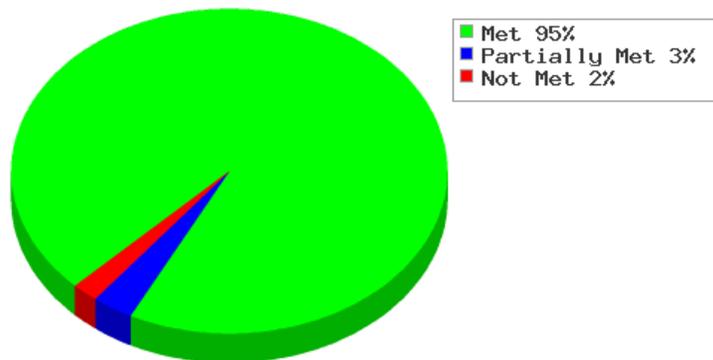
The site visit involved a review of the core EMS documents with the EMS team. The LACMTA EMS Team participated in the review and discussion regarding the scoring.

Detailed scoring on next page

LACMTA - Overall EMS Performance Results

This section compares the percentage of requirements *met*, *partially met* and *not met* with respect to meeting the requirements of an EMS as specified in the ISO 14001:2004 standard. The following scores are the result of the EMS audit presented in this report:

Percent meeting all requirements " Overall Score "	96%
Percent of requirements " Met "	95%
Percent of requirements " Partially Met "	3%
Percent of requirements " Not Met "	2%



	The ISO 14001:2004 standard elements of an EMS	Overall Score (%)	Met (%)	Partially Met (%)	Not Met (%)
4.1	General Requirements	100	100	0	0
4.2	Environmental Policy Requirements	95	90	10	0
4.3.1	Environmental Aspects Requirements	100	100	0	0
4.3.2	Legal and Other Requirements	100	100	0	0
4.3.3	Objectives, Targets and Programs Requirements	100	100	0	0
4.4.1	Resources, Roles, Responsibility and Authority	60	60	0	40
4.4.2	Competence, Training and Awareness	86	71	29	0
4.4.3	Communication	100	100	0	0
4.4.4	EMS Documentation	100	100	0	0
4.4.5	Control of Documents	100	100	0	0
4.4.6	Operational Control	100	100	0	0
4.4.7	Emergency Preparedness and Response	100	100	0	0
4.5.1	Monitoring and Measurement	100	100	0	0
4.5.2	Evaluation of Compliance	100	100	0	0
4.5.3	Nonconformity, Corrective Action and Preventive Action	100	100	0	0
4.5.4	Control of Records	100	100	0	0
4.5.5	Internal Audits	100	100	0	0
4.6	Management Review	92	83	17	0