

## **EPA-Recommended Environmental Best Practices for Federally-Funded Projects**

The U.S. Environmental Protection Agency, Region 9 (EPA) has assembled environmental best practices ("green practices") in six key areas that provide opportunity for broad applicability and benefit across many environmental projects. Use of these practices in environmental projects such as cleanups or infrastructure improvements minimizes the health and environmental impacts from the construction and implementation phases of the projects and results in an improved environmental footprint, reduced energy consumption and costs, and reduced greenhouse gas emissions. Guidance is provided on the following green practices:

- Diesel Emission Reduction Strategies
- Smart Energy Practices
- Green Remediation
- Green Building/Construction Practices
- Water Management
- Environmentally Preferable Purchasing

### **Diesel Emissions Reduction Strategies**

Use clean diesel practices for all on-road and off-road vehicles and equipment. For example –

- Reduce unnecessary idling through the use of auxiliary power units, electric equipment, and strict enforcement of idling limits.
- Use verified diesel emission control technology ("VDEC"), including verified diesel particulate filters ("DPFs") or diesel oxidation catalysts ("DOCs").
- Use cleaner fuels, such as ultra low sulfur diesel (ULSD), biodiesel, liquid petroleum gas, or compressed natural gas.
- Replace older engines with newer, cleaner models.
- Practice good engine maintenance to meet original standards, and properly train operators to run equipment efficiently.

#### **Resources:**

EPA's "Low Cost Ways to Reduce Emissions from Construction Equipment" is found at:

[http://www.epa.gov/ispd/pdf/emission\\_0307.pdf](http://www.epa.gov/ispd/pdf/emission_0307.pdf)

EPA's **Clean Construction** website provides model contracts, codes, laws, rules, and other measures for addressing diesel and other air quality issues from construction and other sources:

<http://www.epa.gov/diesel/construction/contract-lang.htm>

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### **Smart Energy Practices**

Use smart energy practices during project design, construction and operation. For example –

- Use energy efficient products and practices.
- Purchase renewable energy from local utilities.
- Install on-site renewable energy or combined heat and power.

**Resources:**

EPA's **Clean Energy link** provides a portal for clean energy practices and programs at:

<http://www.epa.gov/cleanenergy/>

EPA's **Smart Energy Resources Guide** is a comprehensive primer on clean energy and diesel technologies: <http://www.epa.gov/nrmrl/pubs/600r08049/600r08049.htm>

Energy Star-rated products and energy efficiency information and resources are found at:

<http://www.energystar.gov/>

EPA's **Green Power Partnership Program** provides resources and support for purchasing green power: <http://www.epa.gov/grnpower/>

EPA Region 9's **Water-Energy Connection** webpage provides resources for energy and water savings at water and wastewater facilities:

<http://www.epa.gov/region09/waterinfrastructure/challenges.html>

EPA's **"Portfolio Manager"** is an online tool to simplify tracking and improvement of energy efficiency across multiple facilities. <https://www.energystar.gov/istar/pmpam/>

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### Green Remediation

Use green remediation practices to reduce the environmental footprint of conducting cleanups of contaminant releases. For example –

- Use clean diesel practices
- Use renewable energy sources and technologies
- Reduce the environmental impacts of remedy implementation and maximize the net benefits of cleanup actions.

**Resources:**

**Diesel Emissions Reduction** - see resources listed above.

EPA's **Smart Energy Resources Guide** is a primer on clean energy technologies for hazardous waste cleanups: <http://www.epa.gov/nrmrl/pubs/600r08049/600r08049.htm>

EPA's **Contaminated Site Cleanup Information** website provides tools for making informed decisions about "green cleanup" strategies: <http://clu.in.org/greenremediation/index.cfm>

EPA's **Brownfields Sustainability Pilots** website provides best practices for environmental sustainability during brownfields assessment, cleanup and redevelopment projects:

[http://www.epa.gov/brownfields/sustain\\_plts/](http://www.epa.gov/brownfields/sustain_plts/)

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## Green Building and Construction Practices

Use green construction and building practices in the planning, design and construction of infrastructure, road, building and other construction and building projects. For example –

- Use Energy Star-rated products to reduce building energy use.
- Reuse and/or recycle construction and demolition debris.
- Reuse industrial materials in construction projects, such as in concrete.

### Resources:

EPA's **Green Building** website contains green building and construction related information and resources: <http://www.epa.gov/greenbuilding/index.htm>

The **Federal Green Construction Guide for Specifiers** is a comprehensive guide for procuring green building products and construction services: <http://www.wbdg.org/design/greenspec.php>

EPA's **Resource Conservation** website offers guidance on the reuse and recycling of construction and demolition debris:

<http://www.epa.gov/epawaste/consERVE/rrr/imr/cdm/whatyoucan.htm>

**Guidance on reusing industrial materials in pavement** construction is available at:

<http://www.recycledmaterials.org/tools/uguidelines/index.asp>

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## Water Management Practices

Use water conservation and green storm water management practices in building and landscape design, site redevelopment planning, and in cleanup strategies. For example –

- Employ water efficient products and practices in building and landscaping projects, including those that meet EPA's WaterSense standards.
- Use Low Impact Development approaches to managing storm water, for example, permeable pavement and green roofs.
- Mitigate and manage the storm water impacts of impervious surfaces at contaminated sites.

### Resources:

EPA's **Water-Sense** program provides information on water-efficient products for buildings and landscaping, a list of certified contractors, and other water efficiency resources:

<http://www.epa.gov/watersense/>

EPA's **Water Conservation Plan Guidelines** integrate conservation into water utility capital planning: <http://www.epa.gov/watersense/pubs/guide.htm>

EPA's **Sustainable Infrastructure** website provides information for improving the sustainability of water infrastructure development:



[http://www.epa.gov/waterinfrastructure/bettermanagement\\_energy.html](http://www.epa.gov/waterinfrastructure/bettermanagement_energy.html) and <http://www.epa.gov/region09/waterinfrastructure/>

**EPA's Green Infrastructure and Low Impact Development (LID)** websites provide design guidance and other information on managing storm water as close to the source as possible: <http://www.epa.gov/nps/lid/> and [http://cfpub.epa.gov/npdes/home.cfm?program\\_id=298](http://cfpub.epa.gov/npdes/home.cfm?program_id=298)

**EPA's Brownfields** website provides guidance on storm water management on compacted, contaminated soils in urban areas: <http://www.epa.gov/brownfields/publications/swdp0408.pdf>

**EPA's and AID's Guidelines for Water Reuse** addresses opportunities for using reclaimed water when appropriate to reduce water diversions, decrease wastewater discharge and prevent pollution: <http://www.epa.gov/region09/water/recycling/index.html>

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### Environmentally Preferable Purchasing (EPP)

Purchase certain products with recycled content – a requirement under section 6002 of RCRA for recipients of federal funds, including their contractors. Also, use Environmentally Preferable Purchasing to reduce effects on human health and the environment. For example –

- Purchase materials and supplies with recycled content, such as building and construction materials, office supplies, and paper products.
- Purchase Energy Star or Water Sense certified products, or look for EPEAT-certified products when purchasing electronics.
- Purchase products formulated with safer chemicals to reduce chemical exposures to workers and the public.

#### Resources:

**EPA's Comprehensive Procurement Guidelines (CPG)** website provides information on how to comply with RCRA section 6002 and includes a searchable CPG Product Supplier Directory: <http://www.epa.gov/waste/consERVE/tools/cpg/index.htm>

**EPA's Environmentally Preferable Purchasing (EPP)** website includes product guides for environmentally preferable products and services, including building and construction, carpets, cleaning, electronics, fleets, landscaping, office supplies and other areas: <http://epa.gov/epp/>

**The Office of the Federal Environmental Executive (OFEE)** website includes information on green purchasing and other resources to promote environmental stewardship: <http://www.ofee.gov/>

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For additional resources on greening projects see: <http://www.epa.gov/recovery/resources.html>