

### HGB Draft Non-Road SIP Control Strategies

ID	Old ID	Control Strategy	Category	Year Added	EPA PQSE	NOx Chg.	VOC Chg.	Comment
1	3	Aircraft emission standards	Aircraft /Air Traffic Management	2001	N			These are covered by international standards and any local measure would not be considered permanent.
2	9	Ordering lowest emission engines	Aircraft /Air Traffic Management	2001	N			These are covered by international standards and any local measure would not be considered permanent.
3	25	Changes in general conformity to make provisions more realistic; Allow equipment turnover to count	Airport General Conformity	2001	N			This is not an emissions reduction strategy, but credit should be taken for lower emitting aircraft.
4	26	Modify regulations so credits can be generated for general conformity	Airport General Conformity	2001	N			This is not an emissions reduction strategy.
5a	28	Enhanced Texas Emission Reduction Program (TERP)	Cleaner Equipment Requirements and Incentives	2005	Y			The TERP program could be revised to account for the realities of emission controls on on-road, nonroad, and other mobile source categories.
5b	N/A	Extend TERP to 2018	Cleaner Equipment Requirements and Incentives		Y			Current TERP legislation provides funding for the program until 2012. Proactively extending this funding to 2018 would ensure that this funding would be available until the region is required to meet attainment.
6	32	Aftermarket Technology and Fuel Additive Research Program	Cleaner Equipment Requirements and Incentives	2001	N			Fuel additives not credited in the TERP might be creditable, if they pass EPA approval. One example may include cetane improvers. But the strategy would need to be better defined to provide emission reductions creditable for SIPs.
7	36	Improve inventory of construction equipment; Log hours of actual equipment operation	Construction Equipment and Operations	2001	N			Equipment activity are difficult to prove that a reduction occurred and would not be considered permanent.
8	39	Government construction incentives	Construction Equipment and Operations	2005	Y			Incentive for the use of clean construction equipment have been attempted including the TxDOT program. But the reporting requirements and conflicts with the TERP benefits lead to less use of the program and lower benefits.
9	41	Develop air quality best management practices (BMPs); Use BMPs to manage emissions from construction sites, construction vehicles & wind-blown dust	Construction Equipment and Operations	2005	N			The program needs to be better defined in terms of the use and types of equipment at each job site. The reporting burdens to justify an emission reduction would be onerous.
10	42	Limitations on idling of heavy-duty construction equipment	Construction Equipment and Operations	2005	Y			Many states have regulations to reduce equipment idling. The benefits of the rule may vary depending upon the implementation of the program.
11	45	Water injection for diesel engines	Engine and Fuel Technology	2001	Y			See 5 TERP
12	46	Alternative-fueled equipment for all equipment types	Engine and Fuel Technology	2001	Y			See 5 TERP
13	47	Alternative fuel heavy-duty equipment	Engine and Fuel Technology	2001	Y			See 5 TERP
14	48	Lean NOX catalyst	Engine and Fuel Technology	2001	Y			See 5 TERP
15	49	Early introduction of low-NOX engines	Engine and Fuel Technology	2001	Y			See 5 TERP
16	50	Selective catalytic reduction (SCR)	Engine and Fuel Technology	2001	Y			See 5 TERP
17	51	Compression ignition standards for vehicles and equipment	Engine Standards	2001	N			EPA has already implemented Tier 4 regulations for nonroad equipment.
18	52	Spark ignition standards for vehicles and equipment	Engine Standards	2001	N			Small and large spark-ignition engines have been covered by rulemakings.
19	53	Lower sulfur fuels	Fuel Standards	2001	N			No VOC or NOx benefit beyond Federal mandates for low sulfur gasoline by 2004, on-road diesel by 2006, and off-road diesel by 2012.
20	57	Texas Low Emission Diesel (TxLED)	Fuel Standards	2001	N			Implemented
21	63	Lawnmower exchange; Trade in old gas powered equipment for discounts on zero emission models	Lawn and Garden Engines and Operations	2005	Y			The benefits of such a program could be established, but focus primary on VOC reductions. It should not be restricted to lawnmowers including smaller blowers, string trimmers, etc. But the benefits would be expected to be small.
22	64	Lawnmower recycling programs (rebate program); replace gas mowers with electric	Lawn and Garden Engines and Operations	2005	Y			See 21
23	65	Promote use of cleaner lawn and garden equipment such as lower-emission four-stroke and electric-powered equipment	Lawn and Garden Engines and Operations	2001	Y			See 21
24	66	"Buy a Clunker" concept for small gas equipment	Lawn and Garden Engines and Operations	2001	Y			See 21

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25	67	Disincentives such as fines if caught mowing during Ozone Alerts	Lawn and Garden Engines and Operations	2001	N			This is not a permanent measure and difficult to demonstrate compliance.
26	68	Ban equipment such as two-stroke engines	Lawn and Garden Engines and Operations	2001	N			This would preempt Federal rules.
27	69	No-mowing days	Lawn and Garden Engines and Operations	2005	N			This is not a permanent measure and difficult to demonstrate compliance.
28	70	Grass cutting; Public works will delay cutting grass till 6 pm on ozone action days	Lawn and Garden Engines and Operations	2005	N			This is not a permanent measure and difficult to demonstrate compliance.
29	71	Landscape ordinance for nonresidential areas	Lawn and Garden Engines and Operations	2005	Y			This measure refers to lower maintenance landscaping that reduces the need for off-road equipment usage such as lawnmowers and could reduce water consumption as well.
30	72	Use of auxiliary power units (APUs) for locomotives operating; Controls for locomotives are pre-empted by Federal law, but voluntary controls	Locomotive Engines and Operations	2005	N			Automatic idle shut-off devices may be installed on equipment. This measure was largely applied by the larger railroad on a voluntary basis.
31	73	Accelerated purchase of Tier II locomotive engines	Locomotive Engines and Operations	2005	Y			This measure has been superceded by EPA rules for existing and future locomotives. The rule includes a remanufacturing provision for locomotives in operation today. The rule might be implemented more quickly with incentives for remanufacture or replacement of older engines.
32	74	Electrification of rail	Locomotive Engines and Operations	2005	N			This option may be available for expanded light-rail or other passenger rail options. But the emission reductions would be less use of on-road vehicles.
33	75	Efficiency improvements on In-Use Class 1 Rail Equipment (R11)	Locomotive Engines and Operations	2005	Y			Rail improvements might be considered if it can be shown that locomotive idling or braking events can be reduced.
34	79	Limitations on idling of locomotives	Locomotive Engines and Operations	2005	N			Automatic idle shut-off devices may be installed on equipment and reductions justified through reporting.
35	87	ARB Portable engine registration and rulemaking	Cleaner Equipment Requirements and Incentives	2008	Y			TCEQ is researching the adoption of California rules. This program includes registration and accelerated turnover of equipment to more recent model years.
36A	88	California Marine Vessel Main and Auxiliary Engine Rule	Marine Vessels	2008	Y			TCEQ is researching the adoption of California rules. This rule would mandate low sulfur fuels near the coast, and provides a modest NOx reduction with a large particulate and SOx emissions reductions. The rule has yet to be finalized and withstand court challenges. <a href="http://www.arb.ca.gov/ports/marinevess/marinevess.htm">http://www.arb.ca.gov/ports/marinevess/marinevess.htm</a>
36B	N/A	California Harbor Craft Rule	Marine Vessels	2008	Y			TCEQ is researching the adoption of California rules. The rule would include provisions for mandated turnover of harbor craft engines to those meeting lower emission standards. <a href="http://www.arb.ca.gov/ports/marinevess/harborcraft.htm">http://www.arb.ca.gov/ports/marinevess/harborcraft.htm</a>
37	89	California Cargo Handling Equipment Rule	Cargo Handling Equipment	2008	Y			TCEQ is researching the adoption of California rules. This rule mandates accelerated turnover or retrofit of equipment used at ports and intermodal rail yards. <a href="http://www.arb.ca.gov/ports/cargo/cargo.htm">http://www.arb.ca.gov/ports/cargo/cargo.htm</a>
38	90	Clean Fuel Option: Expand TxLED Use. The use of TxLED could occur in source categories not currently required to implement the fuel use including marine and other engines.	Fuel Standards		N			The use of TxLED is already required for sale for marine and locomotive fuel sales in the 110 counties affected by the Texas regulation. <a href="http://www.tceq.state.tx.us/implementation/air/sip/cleandiesel.html#Draft">http://www.tceq.state.tx.us/implementation/air/sip/cleandiesel.html#Draft</a>
39	91	Provide full funding for the National Retrofit Program	Cleaner Equipment Requirements and Incentives	2008	Y			EPA has set up the mechanism for providing grants to reduce emissions from off-road equipment under the National Clean Diesel Campaign, <a href="http://www.epa.gov/cleandiesel/">http://www.epa.gov/cleandiesel/</a> The funding varies by year (\$47 million in 2008) and is competitive from all states. The funding level is relatively small when applied nationwide.
40	92	Allow private companies to apply for NRP grants	Cleaner Equipment Requirements and Incentives	2008	Y			Further investigation into the application process is required to determine the applicant restrictions, which are determined by EPA.

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41	93	Allow NRP grants to cover incremental costs for TERP or CMAQ retrofits	Cleaner Equipment Requirements and Incentives	2008	N			The use of TERP funds to provide matching might be possible, but would make the Clean Diesel and TERP applications more complicated. The mix of national and state funding however does not lead to more emission reduction.
42	94	Establish emissions trading program for nonroad vehicles (DERC)	Cleaner Equipment Requirements and Incentives	2008	N			Verification of emission reduction credits is likely to be difficult.
43	95	Allow use of TERP funds for administrative costs. Specifically, this can be used to help small companies without the time or resources to apply and track retrofits	Cleaner Equipment Requirements and Incentives	2008	N			The TCEQ would find this difficult to justify, and a legal review of the enabling legislation would be necessary to determine if TCEQ is allowed to provide administrative funding. This measure by itself would not reduce emissions.
44	96	Provide cooperative grant assistance to encourage small companies (<20 employees who do not have the resources to manage grants alone to apply for TERP	Construction Equipment and Operations	2008	N			This measure might be addressed through greater staffing at TCEQ or the TERP administrative entity. The emission reduction benefit would be associated with increase participation rather than with the program itself.
45	97	Development of a Port of Houston Clean Air Action Plan that seeks to minimize emissions from ships, cargo handling equipment, on-road drayage trucks, and port-related rail.	Cleaner Equipment Requirements and Incentives	2008	Y			A port related approach could yield emission reductions, but the program would need to be better defined. The strategies available exist in other measures listed.
46	98	Adopt policies and programs to increase the number of clean construction machines used on public works projects.	Cleaner Equipment Requirements and Incentives	2008	Y			See Measures 8 and 9