

DRAFT RAQC Transportation - Related Ozone Management Measures Snapshot

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- Revised 8/2/2010 -

Measure Type [1]	Brief Description of Measure	Mentioned To Date During 2010 RAQC Mtngs? [2]	Employed/Evaluated in the Past? [3]	Existing Authority/Needed Approvals? [4]	Potential as short, mid, or long-term measure? [5]	Additional Analysis Needed/Level of Effort	Existing EPA SIP Credit Guidance Available?	RAQC Comments/Board Recommendation
Alternative Transportation	Full build-out of FastTracks, including Bus Rapid Transit (BRT), commuter rail, light rail bus, transit, and HOV infrastructure	Yes	FastTracks system has been analyzed extensively through various environmental assessments and is included in DRCOG's most recent baseline modeling and will be included in the 2035 RTP update scheduled for approval in January of 2011.	Voter approval of additional sales tax for full build-out by 2019	Short/Mid/Long (baseline measure)	Work with DRCOG and RTD to determine additional analytical needs; possibly by FastTracks corridor.		
	Transportation connections, connectivity between modes and neighborhoods	Yes	Employed through local government actions, RTD, and through TIP.	RTD, local governments, DRCOG, CDOT	Short/Mid/Long (baseline measure)	Work with DRCOG to evaluate as part of RTP, MetroVision, TIP, and sustainability goals.		
	Increase service levels for public transportation (more frequent headways/service)	Yes						
	Increase use of urban circulators (such as street cars)	Yes						
	Strategic management of park-and-ride facilities/capacity	Yes						
	Provision of bike/ped facilities/infrastructure	Yes						
	Car sharing programs	Yes	Small-scale programs have been implemented in the Denver metro since 1997.	N/A	Short/Mid (voluntary measure)	Evaluate the benefits of an expanded/large scale program throughout region.		
	Evaluate fare structure of RTD to increase demand	Yes	Has not been evaluated	RTD has current legal requirements for fare box recovery	Short/Mid/Long (baseline measure)	Additional analysis on impact of service and legal obligations.		
	Evaluate bike/ped facilities/infrastructure for commute purposes	No	?	?	?	?		
	CA-Type Electric Vehicle Program	Yes	No	?	?	?		

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Land Use	Cooperative regional growth, transportation, and land use planning to achieve air quality and sustainability goals (such as CA SB375, and AB32)	Yes	No	State legislation needed	Mid/Long (baseline measure)	Would require cooperative process through local governments, regional and state transportation agencies and air quality agencies.		
	Intensification (density) of land use development	Yes	Many examples throughout Metro area	Local government	Mid/Long (baseline measure)	Analyze as part of DRCOG's regional land use model.		
	Target growth to urban centers	Yes	DRCOG is currently evaluating as part of sustainability goals for 2035 Metro Vision Plan, which will be approved in January 2011.	Local government	Mid/Long (baseline measure)	Analyze as part of DRCOG's regional land use model.		
	Transit Oriented Communities	Yes	Several examples throughout Metro area since southern light-rail corridors were opened in early 2000's	Local government in cooperation with RTD	Mid/Long (baseline measure)	Analyze as part of DRCOG's regional land use model.		
	Urban growth boundaries (regional)	Yes	An urban growth boundary exists in the DRCOG region through the Mile High Compact that was signed in 2000. Growth boundary does not exist in other parts of the nonattainment area.	No current state authority, voluntary agreements between local governments	Mid/Long (baseline measure)	Analyze as part of DRCOG's regional land use model.		
	Manage the supply of parking (residential, commercial, retail, etc)	Yes	Few examples in Metro area including downtown and some new urban developments	Local governments	Short/Mid (baseline measure)	Analyze as part of DRCOG's regional land use model.		
	Use of innovative development strategies to promote neighborhood design and connectivity (such as community land trusts)	Yes	Examples of land trusts in the region and other parts of country	Local governments in cooperation with private developers	Mid/Long (voluntary measure)	Research examples in other areas, determine opportunities for wide-spread use in Denver area.		
	Changes to State Land Board mission/policies to reduce sprawl and associated emissions	No	No	?	?	?		

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Pricing	Parking pricing	Yes	Market-driven pricing can be found in limited areas of metro region	Local governments or private organizations	Short/Mid (SIP or baseline measure)	Determine impact and feasibility of parking pricing throughout region.		
	VMT based fees to fund transportation	Yes	Program employed/evaluated in other states.	State legislation needed	Short/Mid/Long (SIP or baseline measure)	CDOT is currently considering a VMT-based fee pilot project		
	Transportation facility pricing	Yes	Toll roads have existed in the region since the early 1990's and HOT lanes on I-25 were established in the mid 2000's.	Current state authority exists	Short/Mid/Long (SIP or baseline measure)	Analyze impact of expanded transportation facility pricing.		
	Fuel tax pricing strategies	Yes	State gas tax is currently \$0.22/gal, Federal gas tax is \$0.184/gal (passenger car)	State legislation needed	Short/Mid/Long (SIP or baseline measure)	Analyze impact of fuel tax increases on travel, VMT, and emissions.		
	Pay-as-you-drive insurance	Yes	Currently available through private insurance companies in Colorado	Mandatory program would require state legislation	Short/Mid/Long (SIP or baseline measure)	Analyze impact of mandatory Pay-as-you-drive insurance on travel, VMT, and emissions.		
Regulations/ Policy	MOUs tied to development along public transportation lines and public sector improvements	Yes	Employed in other areas (i.e. Portland, OR)	RTD, local government	Mid/Long (voluntary measure)	Research examples in other areas, determine opportunities for wide-spread use in Denver area.		
	Employer Trip Reduction (ETR) programs (which may include condensed work week options, telework programs, flexible scheduling, transit fare subsidies, van pool, car pool, car sharing programs, parking cash-out, guaranteed ride home, work-place shuttles, or other programs that incentivize alternative transportation and reduce demand for single occupancy vehicle trips)	No	Travel Reduction Advisory Board, created by state legislation in 1991, conducted pilot programs and evaluated ETR programs. Board (in 1994) concluded "the reductions in travel and corresponding air pollution do not justify the expense of such a [mandatory] program." Instead, Board recommended creation of a voluntary employer-based transportation emission reduction program. Such a program has since been the focus of efforts by DRCOG RideArrangers and regional transportation management organizations (TMO's). The continued focus on a voluntary program was confirmed during 2008 SIP process.	No state authority currently exists for a mandatory program.	Short (voluntary measure)	Work with DRCOG and area TMO's to develop education/outreach materials to increase voluntary participation in ETR programs.		

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Fuels	Federal reformulated gasoline	Scheduled for September meeting	Considered in 2008 SIP process and deferred for future consideration as part of RAQC/APCD fuels options study due 9/2010	State opt-in allowed under Clean Air Act. Requires Governor petition to EPA and may take effect one year after petition.	Short (baseline measure)	Part of RAQC/APCD fuels options study due 9/2010		
	7.0 RVP gasoline	Scheduled for September meeting	Considered in 2008 SIP process and deferred for future consideration as part of RAQC/APCD fuels options study due 9/2010	State has general authority to adopt certain fuel strategies. Must include as SIP submittal demonstrating measure is necessary to achieve NAAQS.	Short (SIP measure)	Part of RAQC/APCD fuels options study due 9/2010		
	Eliminate ethanol waiver	Scheduled for September meeting	Considered in 2008 SIP process and deferred for future consideration as part of RAQC/APCD fuels options study due 9/2010	Requires Governor petition to EPA documenting impact of waiver on air quality. Effective one-year after receipt of petition.	Short (baseline measure)	Part of RAQC/APCD fuels options study due 9/2010		
	Eliminate ethanol blending in gasoline during ozone season either on a voluntary or mandatory basis.	No	Impact has been considered in the 2008 SIP	No current state authority exists to ban ethanol	Short (SIP measure)	The three strategies in the fuel options study are considered the most viable		
	Expand use of alternative fuels in governmental and private fleets (such as CNG, biodiesel, electric, E85, etc)	Yes	RAQC and Governor's Energy Office have supported fleet programs using a variety of alternative fuels and technologies, including CNG (since 1995 with ongoing projects), biodiesel (since 2004), E85 (since 2005 with ongoing projects), and hybrid (since 2009 with ongoing projects). Electric vehicle and infrastructure project proposed to begin in 2012 (pending TIP funding request).	No authority exists for mandatory program	Short/Mid (potential SIP or voluntary measure)	Analyze impact of potential more widespread use of alternative fuels. Conduct pilot projects for electric, CNG and other alternatives.	Staff will propose a pilot project to increase the use of electric vehicles and develop fueling infrastructure for the 2012-2017 TIP.	
	Electrification of vehicle fleet	Discussion scheduled for September meeting	HB09-1331 provides state tax credits and federal government provides tax rebates for purchasing electric and other alternative-fueled vehicles. Widespread program has not yet been fully analyzed for Colorado.	HB09-1331 provides tax credits through 2015.	Mid/Long (potential SIP and maintenance measure)	Further analysis of the rate and level of market infiltration potential air pollution benefits is needed.		
	Reduce fuel use in fleet vehicles	Yes	Numerous examples of anti-idling and route efficiency programs in Denver area	Voluntary	Short/Mid/Long (voluntary measure)	Based on pilot projects, analyze the potential benefits of widespread program.	RAQC staff recommends applying for additional funding for program in the 2012-2017 TIP.	

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Motor Vehicles	Improve effectiveness and efficiency of Inspection/Maintenance Program, including alternative test methods, identification and repair evaporative emission sources, and reducing avoidance of testing.	No	AQCC has made adjustments to I/M program over the years to make it more efficient/effective and APCD continues to explore adjustments to the program. Portions of Larimer and Weld counties were added to the program by SB09-003 and will take effect in Nov. 2010.	AQCC has authority to make adjustments to the program.	Short (potential SIP measure)	APCD is continually evaluating improvements to the program based on analysis of current program and special studies.		
	High emitter programs	No	RAQC's Repair Your Air program has existed as a voluntary pilot program since 2003. HB06-1302 created a mandatory remote-sensing high emitter pilot program to evaluate feasibility of a stand alone remote-sensing program or as a supplement to the existing I/M program. Report anticipated late 2010.	AQCC has authority to make adjustments to the program.	Short (potential SIP measure)	Report on remote sensing pilot program anticipated in late 2010.		
	Cash for Clunkers program	No	RAQC has operated a vehicle retirement pilot program as part of Repair Your Air program since 2008. Federal government also sponsored a Cash for Clunkers stimulus program in 2010.	No authority currently exists for a dedicated program funding source.	Short (potential SIP or voluntary measure)	Analyze data from RAQC voluntary program in addition to the Colorado data from the Federal program to determine potential benefit and scope of expanded program.		
	California Clean Car Standards	No	CDPHE evaluated CA standards in 2008, but federal action on GHG standards for motor vehicles obviated need to pursue further at State level.	States can request to opt-in to California program	Mid/Long (baseline measure)	Not currently under consideration.		
	Tighter Federal motor vehicle standards	No	President Obama recently issued an executive order directing EPA and DOT to evaluate another round of tighter tailpipe standards for GHG and criteria pollutants to become effective in the 2016 timeframe.	EPA	Mid/Long (baseline measure)	Analyze impact of tighter federal standards on vehicle emissions in Colorado.		
	Expand Transportation Demand Management (TDM) programs	Not yet	TDM programs encompass a range of trip and VMT reduction strategies. DRCOG has proposed increased funding (\$5.7 million) for TDM programs in its 2012-2017 TIP.	DRCOG has authority to provide funding through TIP	Short/Mid (voluntary measure)	Additional analysis needed on effectiveness of local programs.		
	Diesel retrofits in fleets (control equipment, idling reduction, reduced fuel use, etc)	Yes	RAQC has operated a retrofit program since 2003 and has allocated over \$15 million from grant sources to local public and private fleets.	No current authority for mandatory retrofit programs or state funding sources.	Short (voluntary measure)	Based on analysis of RAQC's voluntary program, analyze for potential for additional emission reduction from expansion of program and potential funding sources.	RAQC staff recommends applying for additional funding for retrofit program in the 2012-2017 TIP.	
	Truck stop electrification	No	TSE was considered and analyzed by outside vendors in early 2000's but not pursued due to lack of funding.	No authority exists to require a mandatory program	Short (voluntary measure)	Analyze potential impact of larger scale TSE and potential funding sources.	RAQC diesel program has shown that Auxiliary Power Units to reduce idling are preferred by fleet owners	

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Operational/ Intelligent Transportation Systems (ITS)	Real time traveler information (transit)	Yes	RTD currently uses various traveler information technologies.	RTD	Short/Mid/Long (baseline measure)	Analyze expanded or new traveler information system's impact on transit ridership.		
	Signal timing and coordination	Yes	DRCOG, local governments and CDOT have an extensive program funded through the TIP to coordinate signal timing and related projects.	DRCOG, local governments, CDOT	Short/Mid/Long (baseline measure)	Analysis of further enhancements to program, such as transit priority at signals, should be evaluated.		
Education/ Outreach	Assistance to local governments in considering the air quality impacts of local land use planning and development	No	RAQC developed a local air quality tools handbook for local government land use and transportation planners in 1997. In need of updating. DRCOG has funding from EPA/DOLA to develop tool to consider impact at local level.	RAQC	Mid/Long (voluntary measure)	Work with DRCOG to evaluate tools available for local entities.		
	Linking personal behavior and societal/environmental costs	Yes	RAQC's current Ozone Aware program focuses on personal behavior to ozone pollution. Outreach has been ongoing since 1998.	Voluntary	Short/Mid/Long (voluntary measure)	Continue to evaluate the effectiveness of education/outreach programs and their impact on increasing understanding of ozone solutions.		
	Eco-Driving Education to encourage driving practices that reduce fuel use and reduce emissions	No	The City/County of Denver ran a pilot program in 2008 and saw a 15% reduction in fuel use.	Voluntary, no current authority for mandatory programs	Short/Mid/Long (voluntary measure)	Additionally analysis needed to evaluate effectiveness of more wide-spread program.		

^[1] (e.g. alternative transportation, land use, fuels, vehicles, fuels, education/outreach, and others that may apply)

^[2] Yes or no and when; including whether it is scheduled to/should be discussed in 2010

^[3] Date and brief explanation of status

^[4] What authorities/approvals exist or are needed (e.g. TABOR vote, legislative approval, agreement by local communities, EPA approval etc).

^[5] **Short-term**: demonstrable benefit of strategy can be realized by 2020; **Mid-term**: demonstrable benefit of strategy can be realized within 20 years; **Long-term**: demonstrable benefit of strategy in more than 20 years. **Bold** indicates most likely timeframe of potential large-scale impact. How it might be used as an ozone measure with the following definitions:

- ◆ SIP Measure: a measure that is explicitly included in the SIP for credit in demonstrating attainment or maintenance and is permanent, quantifiable, enforceable and verifiable
- ◆ Voluntary Measure: a measure that is implemented voluntarily by government or the private sector supporting the achievement of air quality standards and can be included in the SIP's weight of evidence and analysis.
- ◆ Baseline Measure: a measure included in DRCOG's Regional Transportation Plan or other latest regional planning assumptions (regarding land use, transportation, demographic, and growth assumptions) that form

NOTE: THIS TABLE WILL BE AUGMENTED WITH STATIONARY AND AREA SOURCE MEASURES AT A LATER DATE

Regional Air Quality Council

Area/Point Source Strategies | Previously Considered by RAQC or CDPHE

- California paints/solvents/consumer products rule
- Mitigate impacts of fire, especially prescribed fire
- Reduce use of two stroke engines
- Stage II vapor recovery at gas stations
- Revisions to Reg No 7 to address VOC emissions from additional stationary sources
- Control of emissions when completing oil and gas wells (“green” completions)
- Emission controls for other O&G industry equipment
- Emission controls on large NO_x sources statewide (power plants, boilers, cement kilns)
- Encourage early implementation of Maximum Achievable control Technology (MACT) standards
- Increase system-wide condensate tank control requirements to 95% for all tanks
- Leak detection and repair at oil and gas well sites
- Minor source, Best Available Control Technology (BACT) for existing Area/Point Sources for NO_x and VOCs
- Adopt "Control Technique Guidelines" for smaller VOC sources
- NO_x controls on oil and gas drill rigs
- Tree planting guidelines and programs