

2016 AQMP White Papers “Passenger Transportation” Preliminary Draft



Agenda No. 2
Working Group Meeting No. 5
July 1, 2015

Preliminary Draft Document Outline

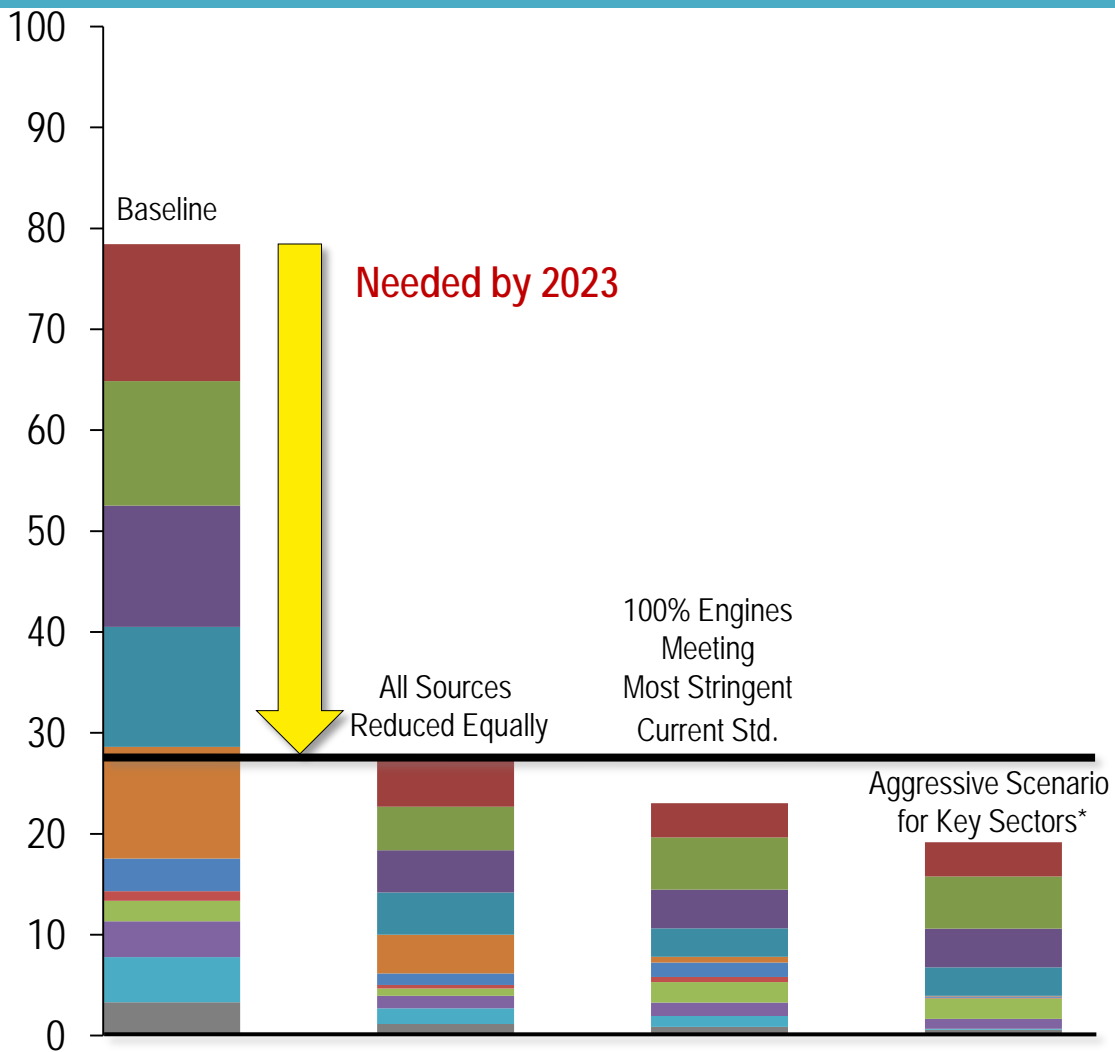
- Introduction
- Background
 - Attainment Challenges
 - Air Quality Impacts
 - Emissions Reduction Progress to Date
- NOx Emission Reduction Scenarios
 - Equal Share
 - 100 Percent Existing Standards
 - 90% Cleaner Emission Levels
 - Various Penetrations of Zero- and Near-Zero Emission:
25%, 50%, 75%

Preliminary Draft Document Outline

- Initial Observations
- Recommendations
- Appendix A – Current Emissions Control Programs
- Appendix B – Potential Emission Reduction
Technologies and Efficiency Measures

Mobile Source NOx Emission Reductions to Achieve 8-Hr Ozone Air Quality Standards (2023)

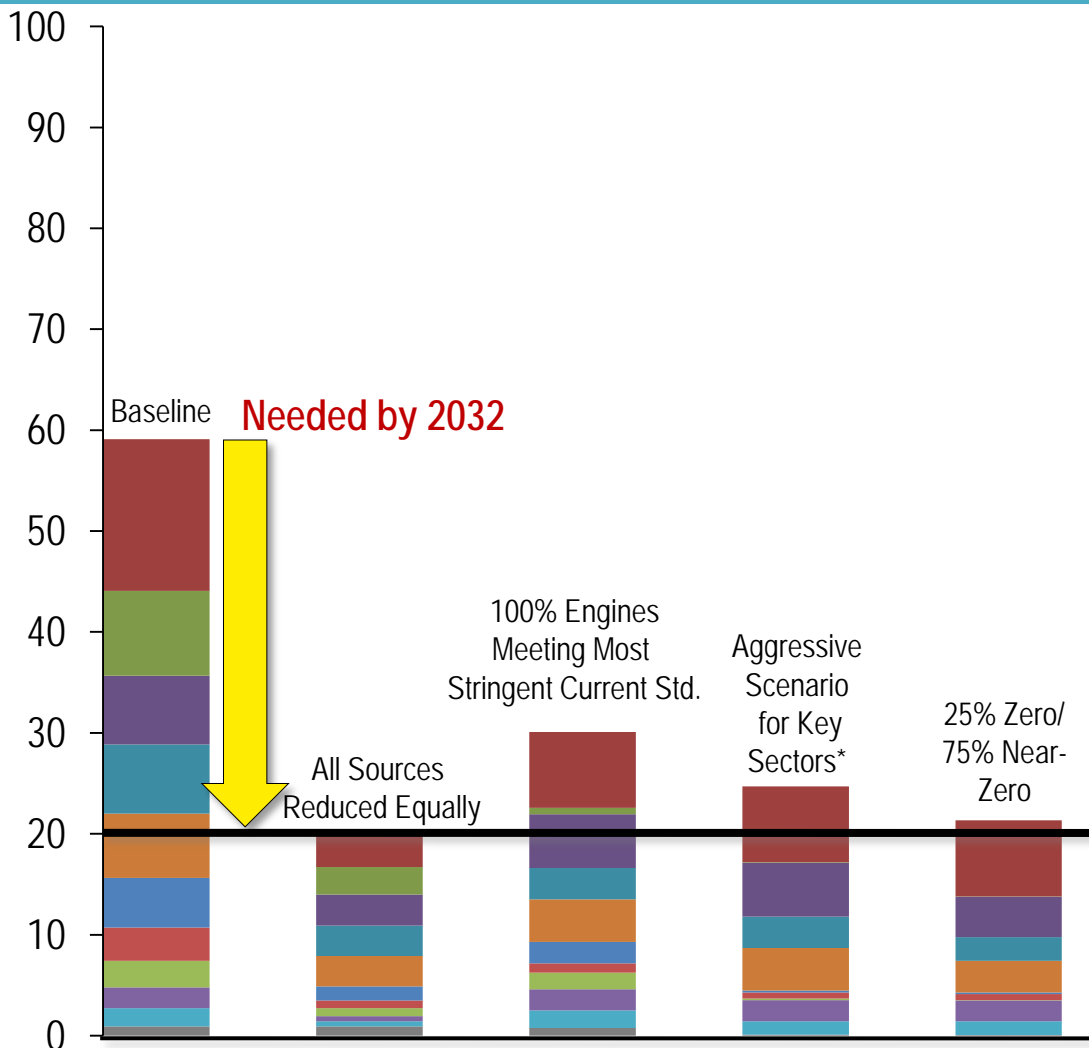
- Aircraft
- Passenger Cars
- LD Trucks
- MD Vehicles
- Urban Buses
- School Buses/Other Buses
- Motorhomes
- Motorcycles
- Ocean Going Vessels
- Passenger Locomotives
- Harbor Craft



*Key Sectors: Buses, Passenger Locomotives, Harbor Craft

Mobile Source NOx Emission Reductions to Achieve 8-Hr Ozone Air Quality Standards (2032)

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Initial Observations and Recommendations

- SCAQMD staff's initial thoughts
- Provided to set framework for discussion with Working Group

Initial Observations – Emission Reduction Scenarios

- All categories need to reduce emissions to attain standards
- Not all categories will be able to achieve “equal share” reductions
- Significant number of on-road passenger vehicles
- Aircraft largest contributor to NOx emissions
- In 2023, sector can achieve emission targets, but require significant turnover of vehicles and/or accelerated deployment of zero- and near-zero emission vehicles/equipment
- In 2032, passenger transportation sector would not meet “equal share” reduction targets if all vehicles/equipment at lowest existing emission standards
- By 2032, further penetration of zero-emission technologies can lead to sector achieving emission target

Initial Observations – Emission Reduction Scenarios

- Other categories will need to reduce emissions beyond “equal share” to cover those unable to meet their “equal share”
- New lower exhaust emission standards needed
- Additional NO_x reductions needed from all passenger transportation sources
- Most effective strategies - combination of advanced technology deployment, incentives (including funding) programs, alternative mobility options, infrastructure enhancements, and urban transformative form
- Operational efficiency enhancements can be made relative to congestion relief, transit routing, intelligent transportation systems, and connected vehicle technologies
- Nexus with goods movement sector

Initial Observations – Advanced Technologies

- Increase number of commercially-available zero- and near-zero emission vehicles
- Need to further commercialize near-zero and zero emission vehicles (especially, in larger vehicle weight categories) as early as possible
- Need for increased battery storage capacity to attract more consumer to acquire zero-emission vehicles
- Need to conduct R&D programs for cleaner than Tier 4 passenger locomotives as soon as possible to meet 2032 standards
- Hybridization play a role to reduce emissions from cruise ships and ferries
- FAA CLEEN program important in developing lower NO_x emitting aircraft

Initial Observations – Efficiency Measures

- Intelligent Transportation Systems and connected vehicle/equipment can provide additional environmental benefits in reducing congestion and fuel savings, and reduce criteria pollutant and greenhouse gas emissions
- Operational efficiencies in transit routing and goods movement will help reduce road congestion and reduce emissions
- Implementation of SB 375 and active transportation programs will help reduce emissions and congestion

Recommendations

- Current programs to accelerate early retirement of light- and medium-duty vehicles are important given the significant number of older vehicles operating in the South Coast Air Basin.
- Accelerated vehicle retirement combined with incentives to purchase cleaner, fuel efficient vehicles and advanced technology vehicles can help accelerate penetration of advanced technology vehicles for the foreseeable future
- Increased public funding assistance will be beneficial for all categories of emissions in the passenger transportation sector
- New mechanisms must be developed to significantly increase deployment of zero- and near-zero emission technology vehicles. Such mechanisms may take the form of regulations or monetary and non-monetary incentives

Recommendations

- Establish a new NOx emissions standard for urban buses and school buses that is 90% cleaner than current bus exhaust emissions standard
- Given the limited financial resources of public transit agencies and public school districts, seek additional funding opportunities for zero-emission bus deployment
- Seek funding opportunities to assist Metrolink in demonstrating alternative fuel and hybrid locomotives that are potentially significantly cleaner than the current Tier 4 locomotive NOx emissions standards

Recommendations

- Encourage greater deployment of “emissions capture systems” at marine ports and at passenger rail maintenance facilities to reduce emissions from cruise ships and ferries while at berth and passenger rail locomotives during maintenance
- Support the FAA CLEEN Program in the development of cleaner, more fuel efficient aircraft engine.
- Renewable fuels may potentially provide criteria pollutant emission reduction benefits along with greenhouse gas emissions benefits.

Recommendations – Operational Efficiencies

- Work with SCAG and RTCs to pursue and effectively implement SB 375 to reduce VMT
- Work with RTCs to promote alternative forms of transportation to single occupant vehicles may include greater usage of public transit and commuter rail and active transportation
- Encourage municipalities to consider “last mile” travel options in future land use planning efforts
- Dedicated truck lanes should give preferential treatment to zero- and near-zero trucks

Recommendations – Operational Efficiencies

- Work with SCAG and RTCs to pursue and effectively implement SB 375 to reduce VMT
- Work with RTCs to promote alternative forms of transportation to single occupant vehicles may include greater usage of public transit and commuter rail and active transportation
- Support studies to assess intelligent transportation systems' (ITS) potential to reduce congestion and criteria pollutant emissions
- Encourage municipalities to consider “last mile” travel options in future land use planning efforts
- Dedicated truck lanes should give preferential treatment to zero- and near-zero trucks

Next Steps

- Incorporate Working Group members/ stakeholders input and comments (July – August 2015)
- Present to the SCAQMD Governing Board with other White Papers (September 2015)
- Additional discussions part of the control measure development for 2016 AQMP