

# On-Road Fleet Rule Carl Moyer Program Implementation Charts For Use With The 2005 Carl Moyer Program Guidelines

## **Use with the 2005 Carl Moyer Program Guidelines**

This document is for informational purposes only.

ARB/Districts will determine project eligibility.

The information provided below is for informational purposes only. ARB will make eligibility determinations for multi-district projects and local air districts will make eligibility determinations for those projects funded with Carl Moyer funds allocated to their district. Eligibility determinations will be based on applicable Guidelines, statute and advisories, which are available at <http://www.arb.ca.gov/msprog/moyer/moyer.htm>.

The Information below describes possible funding options for vehicles subject to the ARB in-use on-road fleet rules. Eligibility is directly impacted by pollutant(s) to be claimed by the project and timing of the project. Emission factors, baseline costs and project life are provided for each option described.

For potential projects in which NO<sub>x</sub>, ROG and PM are claimed additional charts are provided to help ARB and Districts ensure that the reductions are at least three years early to the compliance deadline as required by Guidelines. Instructions for reading those charts are below.

### **Instructions for Reading the Fleet Rule Moyer Implementation Charts**

The charts provided throughout this document are to be used as tools when determining eligibility for projects claiming surplus NO<sub>x</sub>, ROG and/or PM from vehicles subject to ARB on-road fleet rules. ARB/Districts will determine project eligibility.

If there are at least three years prior to the first compliance milestone (left of the three solid lines  in charts):

1. The vehicle is eligible for the incremental cost assuming it meets all other on-road criteria as described in the Carl Moyer Program Guidelines and advisories
2. The project life would be based on the number of years before the first compliance deadline
3. Applicants do not have to show compliance of the vehicle group unless requesting a longer project life

If there are less than three years prior to the first compliance milestone (right of the three solid lines  in charts):

1. An applicant can only receive funding once
2. An applicant must apply for funding at least three years prior to the final compliance deadline
3. Vehicles which have at least three years of project life prior to the compliance deadline are eligible for the incremental cost up to \$14,300/ton of emissions reduced (green cells in charts)
4. Remaining vehicles within the group subject to the regulation with less than three years prior to the compliance deadline are not eligible for funding and must be brought into compliance by the applicant before the Carl Moyer funded project is reimbursed by the district (yellow cells in charts).

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5. Work can begin on the Carl Moyer funded projects once the funds have been obligated.

**Example:**

If an applicant is subject to the chart below and was applying for funding eligibility would be determined as follows:

Vehicles Eligible for Funding	2007	2008	2009	2010	2011
100% of Group					
80% of Group					
40% of Group	4	3			

A) Projects installed and in operation by 12/31/07:

1. Applicant can only apply for funding if they have not received funding for this group of vehicles since 1/1/06.
2. Districts can fund the PM, NOx & ROG portion of up to 40% of the vehicle group (green cells).
3. The vehicles will have a 4 year project life
4. The applicant must agree by contract to show compliance of the remaining 60% of the vehicle group before receiving payment by the district (yellow cells). At post inspection documentation for this compliance must be provide to the district.

B) Projects installed and in operation by 12/31/08:

1. Applicant can only apply for funding if they have not received funding for this group of vehicles since 1/1/06.
2. Districts can fund the PM, NOx & ROG portion of up to 40% of the vehicle group (green cells).
3. The vehicles will have a 3 year project life.
4. The applicant must agree by contract to show compliance of the remaining 60% of the vehicle group before receiving payment by the district (yellow cells). At post inspection documentation for this compliance must be provide to the district.

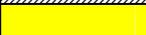
If the projects are installed and in operation any time after 1/1/09 then it is not eligible.

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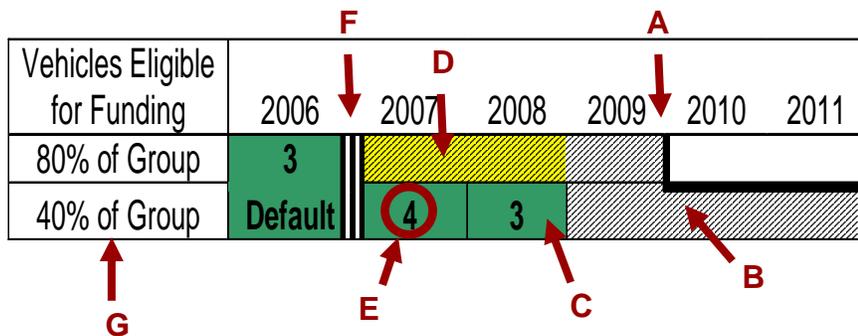
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**Key:**

	=Potential Carl Moyer Funding for PM, NOx & ROG
	=3 years of Moyer Eligibility
	=Portion to be Paid by Applicant
	=Compliance Deadline
	= Point at which applicants can only receive funding once and is triggered three years prior to the first compliance deadline. The applicant must demonstrate that equipment with less than three years prior to the compliance deadline is in compliance and in operation before payment can be made for the Carl Moyer funded project.
<b>Number in Cell</b>	= Maximum project life applicable if installed and in operation by 12/31 of that year. D = default project life as specified in criteria.

**SAMPLE ELIGIBILITY CHART**



- A = Compliance Deadline**
- B = 3 Years of Moyer Eligibility**
- C = Potential Funding**
- D = Portion to be paid by applicant**
- E = Project Life as of 12/31**
- F = One more opportunity line**
- G = % of Group/Fleet Eligible for Funding**

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## Solid Waste Collection Vehicle Projects

- *Solid Waste Collection Vehicles (SWCV) AKA: standard collection vehicles*
- *Rule impacts diesel engines, model years 1960-2006*
- *Rule requires owners to maintain compliance records on-site and make available to ARB upon request*
- *Compliance (phased in BACT) for the SWCVs will be determined by reviewing all engines owned for BACT at each terminal*
- *Regulatory information can be found at: <http://www.arb.ca.gov/msprog/swcv/swcv.htm>*
- *Questions regarding compliance can be directed to Kathleen Mead of the ARB at (916) 324-9550 or at [kmead@arb.ca.gov](mailto:kmead@arb.ca.gov).*
- *Statements of compliance or copies of compliance reports must be obtained from applicants; districts are not liable if applicants falsify reports*

### Eligible Projects Claiming NOx Only:

1. Retrofits
  - a. Baseline emission factors = Refer to Table D-1 on page D-3 of the appendix. PM and ROG must be omitted from these calculations
  - b. Baseline cost = ½ the cost of the retrofit
  - c. Project life = up to 5 years

### Eligible Projects Claiming NOx & ROG Only:

1. MY 2006 new purchases when the engine is certified to an optional standard and is a non-FEL engine.
  - a. Baseline emission factors = Refer to Table D-1 on page D-3 of the appendix. PM must be omitted from these calculations
  - b. Baseline cost = cost of a new engine certified to the current standard + the cost of a level 3 PM only retrofit
  - c. Project life = up to 10 years
2. MY 2007+ new purchase when the engine is certified to at least 30% cleaner than 1.2 g/bhp-hr NOx and is a non-FEL engine.
  - a. Baseline emission factors = Refer to Table D-1 on page D-3 of the appendix. PM must be omitted from these calculations
  - b. Baseline cost = cost of a new engine certified to 1.2 g/bhp-hr NOx standard
  - c. Project life = up to 10 years
3. Diesel engine repowers when the replacement engine is certified to at least 15% cleaner than a 2.5 g/bhp-hr NOx + NMHC engine.
  - a. Baseline emission factors = The 2003-2006 emission factors in tables B-4 or B-5 that correlate with the GVWR of the existing vehicle
  - b. Baseline cost = the cost to repower to a 2.5 g/bhp-hr NOx + NMHC engine + the cost of a level 3 PM only device

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- c. Project life = up to 7 years for repower only projects, and up to 5 years for repower + retrofit projects

### Eligible Projects Claiming NOx & PM Only:

1. Alternative fuel to alternative fuel repowers
  - a. Baseline emission factors = emission factors in tables B-3 that correlate with the existing engine.
  - b. Baseline cost = rebuild of an existing engine
  - c. Project life = up to 7 years

### Eligible Projects Claiming NOx, ROG & PM:

1. Any type of transfer truck (unless it is subject to the public fleet rule)
  - a. Baseline emission factors = Refer to Table D-1 on page D-3 of the appendix.
  - b. Baseline cost = default
  - c. Project life = up to the defaults for each project type as described on page I-11 of the 2005 Carl Moyer Program Guidelines
  
2. DIESEL engine projects which have at least 3 years of project life prior to the regulation's compliance deadlines.
  - a. Baseline emission factors = Refer to Table D-1 on page D-3 of the appendix.
  - b. Baseline cost = default
  - c. Project life = will be determined by ARB/Districts by using charts below

### Potential Funding

- No funding opportunities remain for SWCV projects claiming PM, NOx and ROG.

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### Public Fleet Projects

- *Public Fleet rule has separate compliance deadlines for Low Population Counties and High Population Counties*
- *Low Population fleets have two options for compliance (accelerated fleet turn over or BACT). Low Population fleets must declare early which compliance path will be followed before received funding.*
- *Rule impacts diesel engines, model years 1960-2006*
- *School Buses are not subject to this regulation*
- *Federal fleets are not subject to this regulation*
- *Rule requires owners to maintain compliance records on-site and make available to ARB upon request*
- *Compliance (phased in BACT) for the Public Fleets will be determined by reviewing BACT on each engine of the total fleet owned by the municipality (i.e. department, special district, city, county etc.) or utility*
- *Regulatory information can be found at:  
<http://www.arb.ca.gov/msprog/publicfleets/publicfleets.htm>*
- *Questions regarding compliance can be directed to Kathleen Mead of the ARB at (916) 324-9550 or at [kmead@arb.ca.gov](mailto:kmead@arb.ca.gov).*
- *Statements of compliance or copies of compliance reports must be obtained from applicants and districts are not liable if applicants falsify reports*

#### Eligible Projects Claiming NOx Only:

1. Retrofits
  - a. Baseline emission factors = Refer to Table D-1 on page D-3 of the appendix.  
PM and ROG must be omitted from these calculations
  - b. Baseline cost = ½ the cost of the retrofit
  - c. Project life = up to 5 years

#### Eligible Projects Claiming NOx & ROG Only:

1. MY 2006 new purchases when the engine is certified to an optional standard and is a non-FEL engine.
  - a. Baseline emission factors = Refer to Table D-1 on page D-3 of the appendix.  
PM must be omitted from these calculations
  - b. Baseline cost = cost of a new engine certified to the current standard + the cost of a level 3 PM only retrofit
  - c. Project life = up to 10 years
2. MY 2007 + new purchase when the engine is certified to at least 30% cleaner than 1.2 g/bhp-hr NOx and is a non-FEL engine.
  - a. Baseline emission factors = refer to Table D-1 on page D-3 of the appendix.  
PM must be omitted from these calculations
  - b. Baseline cost = cost of a new engine certified to the 1.2 g/bhp-hr NOx standard
  - c. Project life = up to 10 years

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3. Group 1 (1960 – 1987 MY engine) diesel engine repowers when the replacement engine is certified to at least 15% cleaner than a 4.0 g/bhp-hr NO<sub>x</sub> engine.
  - a. Baseline emission factors = the 1998 – 2002 emission factors in tables B-4 or B-5 that correlate with the GVWR of the existing vehicle
  - b. Baseline cost = the cost to repower to a 4.0 g/bhp-hr NO<sub>x</sub> engine + the cost of a level 3 PM only device
  - c. Project life = up to 7 years for repower only projects, and up to 5 years for repower + retrofit projects
  
4. Group 2 (1988 – 2002) or 3 (2003 – 2006) diesel engine repowers
  - a. Baseline emission factors = Refer to Table D-1 on page D-3 of the appendix. PM must be omitted from these calculations
  - b. Baseline cost = the cost to rebuild the engine + the cost of a level 3 PM only device
  - c. Project life = up to 7 years for repower only projects, and up to 5 years for repower + retrofit projects

#### Eligible Projects Claiming NO<sub>x</sub> & PM Only:

1. Alternative fuel to alternative fuel repowers
  - a. Baseline emission factors = emission factors in tables B-3 that correlate with the existing engine.
  - b. Baseline Cost = rebuild of existing engine
  - c. Project life = up to 7 years

#### Eligible Projects Claiming NO<sub>x</sub>, ROG & PM:

1. DIESEL engine projects which have at least 3 years of project life prior to the regulation's compliance deadlines (see charts below for further group specific information).
  - a. Baseline emission factors = Refer to Table D-1 on page D-3 of the appendix.
  - b. Baseline cost = default
  - c. Project life = will be determined by ARB/Districts by using charts below

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**LOW POPULATION COUNTIES REGULAR COMPLIANCE SCHEDULE**

**Group 1: Engine Model Years 1960-1987**

Regulatory Requirements

Group	Engine Model Years	Percentage of Group to Use Best Available Control Technology	Compliance Deadline
1	1960-1987	20	December 31, 2009
		40	December 31, 2011
		60	December 31, 2013
		80	December 31, 2015
		100	December 31, 2017

Potential Funding

- Funding opportunities remain for Group 1 vehicles through 12/31/14.
- Applicants are only eligible to receive funds for Group 1 once after 1/1/07.

Vehicles Eligible for Funding	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
100% of Group										
80% of Group	3									
60% of Group	D	4	3							
40% of Group	D	D	D	4	3					
20% of Group	D	D	D	D	D	4	3			

**Group 2: Engine Model Years 1988-2002**

Regulatory Requirements

Group	Engine Model Years	Percentage of Group to Use Best Available Control Technology	Compliance Deadline
2	1988-2002	20	December 31, 2008
		40	December 31, 2010
		60	December 31, 2012
		80	December 31, 2014
		100	December 31, 2016

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Potential Funding

- Funding opportunities remain for Group 2 vehicles through 12/31/13.
- Applicants are only eligible to receive funds for Group 2 once after 1/1/06.

Vehicles Eligible for Funding	2008	2009	2010	2011	2012	2013	2014	2015	2016
60% of Group	4	3							
40% of Group	D	D	4	3					
20% of Group	D	D	D	D	4	3			

**Group 3: Engine Model Years 2003-2006**

Regulatory Requirements

Group	Engine Model Years	Percentage of Group to Use Best Available Control Technology	Compliance Deadline
3	2003-2006 (Includes dual-fuel and bi-fuel engines)	20	December 31, 2011
		40	December 31, 2012
		60	December 31, 2013
		80	December 31, 2014
		100	December 31, 2015

Potential Funding

- Funding opportunities remain for Group 3 vehicles through 12/31/12.
- Applicants are only eligible to receive funds for Group 3 once after 1/1/09.

Vehicles Eligible for Funding	2008	2009	2010	2011	2012	2013	2014	2015
100% of Group	3							
80% of Group	4	3						
60% of Group	D	4	3					
40% of Group	D	D	4	3				
20% of Group	D	D	D	4	3			

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**LOW POPULATION COUNTIES ACCELERATED TURN OVER OPTION**

Regulatory Requirements

Engine Model Year	Fleet Percent to Repower with a 1994 or newer engine	Compliance Date as of Dec 31st	Percent of Fleet to use BACT	Compliance Date as of Dec 31st
1960 –1993	100%	2020	100%	2025
1994 - 2006	N/A	N/A	100%	2025

Potential Funding

Repowers & Fleet Modernization

- Funding opportunities remain for repowers and fleet modernization projects through 12/31/17.

Vehicles Eligible for Funding	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
100% of Group	<b>Default</b>						<b>4</b>	<b>3</b>			

Retrofits

- Funding opportunities remain for retrofit projects through 12/31/22.

Vehicles Eligible for Funding	2020	2021	2022	2023	2024	2025
100% of Group	<b>5</b>	<b>4</b>	<b>3</b>			

**HIGH POPULATION COUNTIES**

**Group 1: Engine Model Years 1960-1987**

Regulatory Requirements

Group	Engine Model Years	Percentage of Group to Use Best Available Control Technology	Compliance Deadline
1	1960-1987	20	December 31, 2007
		60	December 31, 2009
		100	December 31, 2011

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Potential Funding

- Funding opportunities remain for Group 1 vehicles through 12/31/08.
- Applicants are only eligible to receive funds for Group 1 once after 1/1/06.

Vehicles Eligible for Funding	2008	2009	2010	2011
40% of Group	3			

**Group 2: Engine Model Years 1988-2002**

Regulatory Requirements

Group	Engine Model Years	Percentage of Group to Use Best Available Control Technology	Compliance Deadline
2	1988-2002	20	December 31, 2007
		60	December 31, 2009
		100	December 31, 2011

Potential Funding

- Funding opportunities remain for Group 2 vehicles through 12/31/08.
- Applicants are only eligible to receive funds for Group 2 once after 1/1/06.

Vehicles Eligible for Funding	2008	2009	2010	2011
40% of Group	3			

**Group 3: Engine Model Years 2003-2006**

Regulatory Requirements

Group	Engine Model Years	Percentage of Group to Use Best Available Control Technology	Compliance Deadline
3	2003-2006 (Includes dual-fuel and bi-fuel engines)	50	December 31, 2009
		100	December 31, 2010

Potential Funding

4. No funding opportunities remain for Group 3 vehicle projects claiming PM, NOx and ROG.

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### Urban Bus Projects

- *Urban Buses are regulated by the Public Transit Agency Vehicle regulation.*
- *Regulation has requirements for both agencies on an alternative fuel path and agencies on a diesel fuel path to meet NOx and PM fleet averages.*
- *Transit agencies are required to submit compliance reports to ARB annually and compliance (fleetwide reduction calculations) for the urban buses are determined by reviewing the fleetwide averages and reductions of the total urban buses, including spares, providing fixed route service for that transit agency.*
- *Regulatory details can be found at:  
<http://www.arb.ca.gov/msprog/bus/frmlregdocuments.htm>*
- *Regulatory compliance must be confirmed with Kathleen Mead of the ARB at (916) 324-9550 or at [kmead@arb.ca.gov](mailto:kmead@arb.ca.gov). Written confirmation of compliance from ARB must be maintained in district's project files.*

#### Eligible Projects:

1. NOx & ROG on all projects if the UB NOx fleetwide average is no more than:
  - a. Fleets established through 12/31/04 = 4.8 g/bhp-hr of NOx
  - b. Fleets established after 1/1/05 = 4.0 g/bhp-hr of NOx
2. PM on all projects if the UB fleetwide PM reductions are at least:
  - a. Fleets established through 12/31/04 = 85%
  - b. Fleets established after 1/1/05 = 0.01 g/bhp-hr times the total number of diesel-fueled buses
3. ROG on all projects

#### **Alternative Fuel Path Agencies Established Through 12/31/04**

#### Regulatory Requirements

- Fleet wide NOx emissions can not exceed 4.8 g/bhp-hr
- Fleet wide Diesel PM emissions must be reduced by:
  1. 60 percent beginning January 1, 2007.
  2. 85 percent beginning January 1, 2009.

#### Potential Funding

- Once final fleet wide requirements have been met funding opportunities do not expire

Fleet wide NOx emissions	Fleet Wide PM Reductions	2008+
4.8 g/bhp-hr	85 - 100%	<b>Default*</b>

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### Diesel Fuel Path Agencies Established Through 12/31/04

#### Regulatory Requirements

- Fleet wide NOx emissions can not exceed 4.8 g/bhp-hr
- Fleet wide Diesel PM emissions must be reduced by:
  1. 60 percent beginning January 1, 2005.
  2. 85 percent or equal to 0.01 g/bhp-hr times the total number of current diesel-fueled active fleet buses whichever is greater beginning January 1, 2007.

#### Potential Funding

- Once final fleet wide requirements have been met funding opportunities do not expire

Fleet wide NOx emissions	Fleet Wide PM Reductions	2008+
4.8 g/bhp-hr	85 - 100%	<b>Default*</b>

### III. Agencies Established After 1/1/05, Regardless of Fuel Path

#### Regulatory Requirements

- Fleet wide NOx emissions can not exceed 4.0 g/bhp-hr
- Fleet wide Diesel PM emissions can not exceed:
  1. 0.05 g/bhp-hr times the total number of diesel-fueled buses in the active fleet through December 31, 2009
  2. 0.01 g/bhp-hr times the total number of diesel-fueled buses in the active fleet as of January 1, 2010

#### Potential Funding

- Once final fleet wide requirements have been met funding opportunities do not expire

Fleet wide NOx emissions	PM emissions per diesel vehicle	2008+
4.0 g/bhp-hr	0.01 g/bhp-hr	<b>Default*</b>

\* Default project life available for these projects are described on page I-11 of the 2005 Carl Moyer Program Guidelines

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### Transit Fleet Vehicle Projects

- *Transit vehicles are regulated by the Public Transit Agency Vehicle regulation*
- *Regulation requires agencies on to meet NOx and PM fleet averages*
- *Transit agencies are required to submit compliance reports to ARB annually and compliance (fleetwide reduction calculations) for the transit fleet vehicles are determined by reviewing the fleetwide averages and reductions of the total transit fleet vehicles, including spares, providing fixed route service for that transit agency.*
- *Regulatory details can be found at:  
<http://www.arb.ca.gov/msprog/bus/frmlregdocuments.htm>*
- *Regulatory compliance must be confirmed with Kathleen Mead of the ARB at (916) 324-9550 or at [kmead@arb.ca.gov](mailto:kmead@arb.ca.gov). Written confirmation of compliance from ARB must be maintained in district's project files.*

#### Eligible Projects:

1. NOx & ROG on all projects if the TFV NOx fleetwide average is no more than 2.4 g/bhp-hr
2. PM on all projects if the TFV fleetwide PM reductions are at least 80%
3. PM with a limited project life if the TFV fleetwide PM reductions are:
  - a. Fleets established from 1/1/07-12/31/09 = 50-79%
4. ROG on all projects

#### **Fleet NOx Average**

##### Regulatory Requirements

- Fleet wide NOx emissions can not exceed
  1. 3.2 g/bhp-hr by December 31, 2007
  2. 2.4 g/bhp-hr by December 31, 2010

##### Potential Funding

- Applicants are only eligible to receive funds to help meet the NOx requirement once after 1/1/05. Once final fleet wide requirements have been met funding opportunities do not expire.

Fleet wide NOx emissions	2008	2009	2010+
≤2.4 g/bhp-hr		Default*	

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**Fleet PM Average**

**Agencies Established Through December 31, 2006**

Regulatory Requirements

- Fleet wide Diesel PM emissions must be reduced by:
  1. 40 percent beginning December 31, 2007
  2. 80 percent beginning December 31, 2010

Potential Funding

- Once final fleet wide requirements have been met funding opportunities do not expire.

Fleet Wide PM Reductions	2008	2009	2010+
80 - 100%	<b>Default*</b>		

**Agencies Established January 1, 2007 - December 31, 2009**

Regulatory Requirements

- Fleet wide Diesel PM emissions must be reduced by:
  1. 50 percent beginning December 31, 2010
  2. 80 percent beginning December 31, 2012

Potential Funding

- Applicants are only eligible to receive funds to help meet the PM requirement once after 1/1/08. Once final fleet wide requirements have been met funding opportunities do not expire.

Fleet Wide PM Reductions	2008	2009	2010	2011	2012+
80 - 100%	<b>Default*</b>				
50 - 79%	<b>4</b>	<b>3</b>			

\* Default project life available for these projects are described on page I-11 of the 2005 Carl Moyer Program Guidelines