



## Goods Movement Emission Reduction Grant Program 2021/22 BAAQMD Locomotive Project Fact Sheet

The Bay Area Air Quality Management District (BAAQMD or District) is accepting applications for locomotive projects. This program is funded by and follows the guidelines of the California Air Resources Board's (ARB) **Proposition 1B: Goods Movement Emission Reduction Program (GMP, Program)**. For more information on the Goods Movement Program see: <https://ww2.arb.ca.gov/our-work/programs/proposition-1b-goods-movement-emission-reduction-program>

The GMP is a partnership between the California Air Resources Board (ARB) and local agencies to quickly reduce diesel emissions and health-risk from freight movement along California trade corridors. Projects funded under this Program must achieve early or extra emission reductions not otherwise required by law or regulation.

### When will funding be available?

The District will accept applications for locomotive projects **through Friday, December 17, 2021**.

### How much funding is available for locomotive projects?

The District has about \$10 million in California GMP Bond funding available for this funding cycle for all project categories including locomotive projects. Table 1 shows how the potential funding amounts vary based on the type of locomotive and when the locomotive project is completed.

**Table 1: GMP Locomotive Project Funding Levels<sup>1</sup>**

Locomotive type	Fuel use requirement	Funding levels <sup>2</sup>
Switcher (1,006-2,300 hp)	<i>Class 1, 2, and 3 with a minimum usage of 20,000 gal/ year</i>	75% up to \$1,875,000
	<i>Class 3 with usage of 5,000 to 19,999 gal/ year</i>	75% up to \$937,500
	<i>Class 3 with a minimum usage of 5,000 gal/year</i>	Tier 4 rail car mover 50% up to \$250,000 Zero Emission rail car mover 75% up to \$500,000
Medium hp (2,300-4,000 hp)	<i>Class 1, 2, and 3 with a minimum usage of 20,000 gal/ year</i>	75% up to \$2,250,000
	<i>Class 3 with usage of 5,000 to 19,999 gal/ year</i>	75% up to \$1,125,000
Line-haul (4,001 hp +) 90-100% CA	<i>minimum usage of 20,000 gal/ year</i>	75% up to \$2,250,000
Line-haul (4,001 hp +) 75% CA	<i>minimum usage of 20,000 gal/ year</i>	60% up to \$1,800,000
Line-haul (4,001 hp +) 50% CA	<i>minimum usage of 20,000 gal/ year</i>	35% up to \$1,050,000
Line-haul (4,001 hp +) 30% CA	<i>minimum usage of 20,000 gal/ year</i>	15% up to \$450,000

<sup>1</sup> If the old equipment is banned from California operation instead of being scrapped, the funding amount is reduced by 20%.

<sup>2</sup> The percentage is based on the costs that are eligible for reimbursement under this program.

### **What equipment is eligible?**

Equipment eligible to receive funding includes diesel-powered freight locomotives with no or minimal emissions control technology (i.e., uncontrolled, or meeting Tier 0 through Tier 2 standards).

### **What project types are eligible?**

Eligible projects will replace or retrofit (retrofit includes rebuild, repower, remanufacture, filter installation, and all other modifications other than replacement) an uncontrolled, or Tier 0 through Tier 2 locomotives with a new engine or alternative technology that meets U.S. EPA Tier 4 or lower emission standards (1.30 grams per brake horsepower-hour (g/bhp-hr) or lower NOx and 0.03 g/bhp-hr or lower PM). For existing class 3 locomotives, replacement of Tier 0 through Tier 2 switchers to Tier 4 or zero emission rail car movers are also eligible. Projects involving a Locomotive Emissions Capture and Control System are also eligible for funding. Please contact the District for more information on these projects.

### **How will projects be selected?**

District staff will evaluate all applications received during the solicitation period and submit a single approved-projects list to ARB for competitive ranking based on estimated emission reductions and cost-effectiveness. Applicants may request a reduced funding amount to increase a proposed project's competitiveness.

### **How can I apply?**

Project applications are available on the District's website at [www.baaqmd.gov/goods](http://www.baaqmd.gov/goods). Applications and all supporting documentation **must be received by the District electronically by 11:59pm PDT on Friday, December 17, 2021.**

### **Where can I find more information?**

If you have any questions regarding this program or the application process, please contact Yu Zhang Liu by phone at **(415) 749-8430** or by e-mail at: [yliu@baaqmd.gov](mailto:yliu@baaqmd.gov)

### **Useful Resources:**

- BAAQMD Goods Movement Program website: [www.baaqmd.gov/goods](http://www.baaqmd.gov/goods)
- ARB Goods Movement Emission Reduction Grant Program: <https://ww2.arb.ca.gov/our-work/programs/proposition-1b-goods-movement-emission-reduction-program>
- Update to Locomotive Grant Project Category, [Executive Order G-20-143](#)

***This document is not a complete list of program requirements. Please see the ARB Goods Movement Emission Reduction Grant Program guidelines (<https://ww2.arb.ca.gov/our-work/programs/proposition-1b-goods-movement-emission-reduction-program>) for the complete program requirements.***

***\* Below is a summary of the program requirements from the 2015 ARB GMP guidelines with 2020 guideline updates and not a complete list of requirements.***

**APPENDIX B: Locomotives and Railyards**

**A. Equipment Project Specifications**

<p>Eligible Equipment</p> <p>General Requirements (applicable to all project options).</p>	<p><b>Locomotive projects</b>                  Diesel-powered freight locomotives with no or minimal emissions control technology (i.e., uncontrolled, or meeting Tier 0 through Tier 2 standards)</p> <p>Equipment owner must demonstrate:</p> <ul style="list-style-type: none"> <li>• Operation or equivalent locomotive horsepower operation in California for the past 2 years.</li> <li>• For switchers and medium horsepower locomotives: at least 50% operation or equivalent locomotive horsepower operation within the four California trade corridors for the past 2 years.</li> <li>• For line haul locomotives: a majority of the minimum percentage operation or equivalent locomotive horsepower operation within the four California trade corridors for the past 2 years.</li> <li>• Estimated diesel fuel usage of 20,000 gallons or equivalent per year or greater for Class I or Class II railroads.</li> <li>• Estimated diesel fuel usage of 5,000 gallons or equivalent per year or greater for Class III railroads.</li> </ul> <p>Locomotive emissions capture and control system projects                  Existing freight railyards within the four California trade corridors                  Equipment owner shall:</p> <ul style="list-style-type: none"> <li>• Commit to the project life specified by the applicable equipment project option.</li> <li>• Adhere to all Program requirements during the project life.</li> <li>• Agree to equipment inspections.</li> <li>• Comply with record-keeping, reporting, and Program review or fiscal audit requirements.</li> <li>• Sign a legally binding contract with the local agency including project milestones and completion deadlines.</li> <li>• Properly maintain upgraded equipment in good operating condition and according to manufacturer's recommendations.</li> <li>• Demonstrate proof of equipment warranty and insurance on upgraded equipment.</li> <li>• Certify that there are no outstanding CARB violations or non-compliance with CARB regulations associated with the equipment or the owner.</li> <li>• Exclude any Program-funded equipment from the compliance calculations for the 1998 agreement for locomotives operating in the South Coast Air Basin for the duration of the project life (applicable to Union Pacific and BNSF Railway only).</li> </ul>
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Locomotives and Railyards (cont.)

<p>Option (1): Switcher Locomotive (1,006 hp 2,300 hp) Funding Options</p>	<p>Partial funding (see options below) to replace or retrofit (retrofit Includes rebuild, repower, remanufacture, filter installation, and all other modifications other than replacement) an uncontrolled, or Tier 0 through Tier 2 switcher locomotive with a new engine or alternative technology that meets U.S. EPA Tier 4 or lower emission standards (1.30 grams per brake horsepower-hour (g/bhp-hr) or lower NOx and 0.03 g/bhp-hr or lower PM).</p> <p>For Class I, Class II: and Class III Railroads with minimum usage of 20,000 gallons/year, partial funding up to 75% of eligible costs or \$1,875,000*, whichever is lower, to replace or retrofit a switcher locomotive with a new engine or alternative technology.</p> <p>For Class III Railroads with minimum usage of 5,000 to 19,999, partial funding up to 75% of eligible costs or \$937,500*, whichever is lower, to replace or retrofit a switcher locomotive.</p> <p>*If the equipment is banned from California operation instead of scrapped, the funding amount is reduced by 20%.</p> <p>Eligible costs may include a new chassis, freshly manufactured or retrofitted engine(s), new generator set(s), filter and diesel oxidation catalyst for PM control, exhaust gas recirculation and selective catalytic reduction device for NOx control, other emission control equipment, and new or upgraded mechanical/electrical/control system components necessary for safe operation.</p> <p>Ineligible costs include auto start/stop devices required by regulation or agreements, GPS devices and associated monitoring and reporting costs, design, engineering, consulting, license, registration, taxes, insurance, operation, maintenance, and repair.</p>
<p>Requirements</p>	<p>The new or upgraded equipment must meet the required emission levels or standards as evidenced by a U.S. EPA Certificate of Conformity (if available) and a CARB Verification Letter of the emission levels achieved.</p> <p>In addition to the General Requirements, equipment owner shall:</p> <ul style="list-style-type: none"> <li>• Commit to 90% or 100% California-only operation for the duration of the project life equipment is permitted to temporarily travel out-of-state for periodic maintenance, if outlined in the contract between the local agency and equipment owner.</li> <li>• Commit to at least 50% of operation within the four California trade corridors for duration of the project life.</li> <li>• Commit to a project life of 15 years.</li> <li>• Commit to the funded locomotive using California CARB diesel fuel unless CARB approves an exemption and it is included in the contract between the local agency and equipment owner.</li> <li>• Scrap the old engine/locomotive, or ban old engine/locomotive from California operation (replacements and retrofits involving engine replacement).</li> <li>• Install an active GPS device on both the old equipment (if not scrapped) and the new equipment, fund and commit to data collection, and report location data.</li> </ul>

Locomotives and Railyards (cont.)

<p>Option (2): Tier 4 or Zero Emission Rail Car Mover For Class III Railroads Only</p>	<p>Partial funding (see options below) to replace an uncontrolled, or Tier 0 through Tier 2 switcher locomotive with a new Tier 4 or Zero emission rail car mover. Note: Zero emission rail car movers or similar rail vehicle used for rail switching operations must be able to satisfy current operational needs being performed by the existing equipment that is being replaced.</p>						
<p>Funding Options</p>	<table border="0"> <thead> <tr> <th data-bbox="456 520 764 552"><u>Equipment</u></th> <th data-bbox="873 520 1052 552"><u>Funding Amount</u></th> </tr> </thead> <tbody> <tr> <td data-bbox="456 552 764 583">Tier 4 rail car mover</td> <td data-bbox="873 552 1052 583">50% up to \$250,000 of eligible cost</td> </tr> <tr> <td data-bbox="456 583 764 611">Zero emission rail car mover</td> <td data-bbox="873 583 1052 611">75% up to \$500,000 of eligible cost</td> </tr> </tbody> </table>	<u>Equipment</u>	<u>Funding Amount</u>	Tier 4 rail car mover	50% up to \$250,000 of eligible cost	Zero emission rail car mover	75% up to \$500,000 of eligible cost
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<p>Requirements</p>	<p>Eligible costs may include the purchase of a new rail car mover.</p> <p>Ineligible costs include auto start/stop devices required by regulation or agreements, design, engineering, consulting, license, registration, taxes, insurance, operation, maintenance, and repair.</p> <p>*If the equipment is banned from California operation instead of scrapped, the funding amount is reduced by 20%.</p> <p>For diesel equipment, the new equipment must be certified or verified and meet the U.S. EPA Tier 4 emission level standard. For zero emission equipment, the new equipment must be certified, verified, or approved by CARB as applicable.</p> <p>The rail car mover must perform the same work and meet the operation needs of the existing locomotive. Metrics for determining "work" include, but are not limited to, duty cycle, tractive effort or pulling force (drawbar force).</p> <p>In addition to the General Requirements, equipment owner shall:</p> <ul style="list-style-type: none"> <li>• Commit to 90% or 100% California-only operation for the duration of the project life; equipment is permitted to temporarily travel out-of-state for periodic maintenance, if outlined in the contract between the local agency and equipment owner.</li> <li>• Commit to at least 50% of operation within the four California trade corridors for duration of the project life.</li> <li>• Commit to a project life of 15 years.</li> <li>• Scrap the old engine and any other parts or components that produces emissions, or ban old engine/locomotive from California operation (replacements and retrofits involving engine replacement).</li> <li>• Install an active GPS device on both the old equipment (if not scrapped) and the new equipment, fund and commit to data collection, and report location data.</li> </ul>						

Locomotives and Railyards (cont.)

<p>Option (3): (Medium Horsepower) Locomotive (2,301 hp 4,000 hi) Funding Options</p>	<p>Partial funding (see options below) to replace or retrofit (retrofit includes rebuild, repower, remanufacture, filter installation, and all other modifications other than replacement) an uncontrolled, Tier 0 through Tier 2 medium horsepower locomotive with a new engine or alternative technology that meets U.S. EPA Tier 4 or lower emission standards (1.30 g/bhp-hr or lower NOx and 0.03 g/bhp-hr or lower PM).</p> <p>For Class I, Class II: and Class III Railroads with minimum usage of 20,000 gallons/year, partial funding up to 75% of eligible costs or \$2,250,000*, whichever is lower, to replace or retrofit a switcher locomotive with a new engine or alternative technology.</p> <p>For Class III Railroads with minimum usage of 5,000 to 19,999, partial funding up to 75% of eligible costs or \$1,125,000*, whichever is lower, to replace or retrofit a switcher locomotive.</p> <p>*If the equipment is banned from California operation instead of scrapped, the funding amount is reduced by 20%.</p> <p>Eligible costs may include a new chassis, freshly manufactured or retrofitted engine(s) new generator set(s), filter and diesel oxidation catalyst for PM control, exhaust gas recirculation and selective catalytic reduction device for NOx control, other emission control equipment, and new or upgraded mechanical/electrical/control system components necessary for safe operation. Ineligible costs include auto start/stop devices required by regulation or agreements, GPS devices and associated monitoring and reporting costs, design, engineering, consulting, license, registration, taxes, insurance, operation, maintenance, and repair.</p>
<p>Requirements</p>	<p>The new or upgraded equipment must meet the required emission levels or standards as evidenced by a U.S. EPA Certificate of Conformity (if available) and a CARB Verification Letter of the emission levels achieved.</p> <p>In addition to the General Requirements listed previously, equipment owner shall'</p> <ul style="list-style-type: none"> <li>• Commit to 90% California or 100% California-only operation for the duration of the project life; equipment is permitted to temporarily travel out-of-state for periodic maintenance, if outlined in the contract between the local agency and equipment owner.</li> <li>• Commit to at least 50% of operation within the four California trade corridors for the duration of the project life.</li> <li>• Commit to a project life of 15 years.</li> <li>• Commit to the funded locomotive using California CARB diesel fuel unless approves an exemption and it is included in the contract between the local agency and equipment owner.</li> <li>• Scrap or ban the old engine/locomotive from California operation (replacements and retrofits involving engine replacement).</li> <li>• Install an active GPS device on both old (if not scrapped) and new equipment, fund and commit to data collection, and report location data.</li> </ul>

**Locomotives and Railyards (cont.)**

<p>Option (4): Line-Haul Locomotive (4,001 hp or higher)</p>	<p>Partial funding (see options below) to replace or retrofit (retrofit includes rebuild, repower, remanufacture, filter installation, and all other modifications other than replacement) an uncontrolled, Tier 0 through Tier 2 line-haul locomotive with a new engine or alternative technology that meets U.S. EPA Tier 4 or lower emission standards (1.30 g/bhp-hr or lower NOx and 0.03 g/bhp-hr or lower PM).</p>										
<p>Funding Options</p>	<table border="0"> <thead> <tr> <th data-bbox="448 478 672 508"><u>California Operation</u></th> <th data-bbox="878 478 1073 508"><u>Funding Amount*</u></th> </tr> </thead> <tbody> <tr> <td data-bbox="488 508 634 537">90% to 100%</td> <td data-bbox="837 508 1081 537">75% up to \$2,250,000</td> </tr> <tr> <td data-bbox="537 537 586 567">75%</td> <td data-bbox="837 537 1081 567">60% up to \$1,800,000</td> </tr> <tr> <td data-bbox="537 567 586 596">50%</td> <td data-bbox="837 567 1081 596">35% up to \$1,050,000</td> </tr> <tr> <td data-bbox="537 596 586 625">30%</td> <td data-bbox="837 596 1081 625">15% up to \$450,000</td> </tr> </tbody> </table> <p data-bbox="448 646 1373 701">*If the equipment is banned from California operation instead of scrapped, the funding amount is reduced by 20%.</p> <p data-bbox="448 730 1357 869">Eligible costs may include a new chassis, freshly manufactured or retrofitted engine(s), new generator set(s), filter and diesel oxidation catalyst for PM control, exhaust gas recirculation, and selective catalytic reduction device for NOx control, other emission control equipment, and new or upgraded mechanical/electrical/control system components necessary for safe operation.</p> <p data-bbox="448 898 1357 1003">Ineligible costs include auto start/stop devices required by regulation or agreements, GPS devices and associated monitoring and reporting costs, design, engineering, consulting, license, registration, taxes, insurance, operation, maintenance, and, and repair.</p>	<u>California Operation</u>	<u>Funding Amount*</u>	90% to 100%	75% up to \$2,250,000	75%	60% up to \$1,800,000	50%	35% up to \$1,050,000	30%	15% up to \$450,000
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<p>Requirements</p>	<p data-bbox="448 1033 1373 1117">The new or upgraded equipment must meet the required emission standards as evidenced by a U.S. EPA Certificate of Conformity (if available) and a CARB Verification Letter of the emission levels achieved.</p> <p data-bbox="448 1146 1325 1171">In addition to the General Requirements listed previously, equipment owner shall:</p> <ul data-bbox="456 1176 1373 1675" style="list-style-type: none"> <li>• Commit to a minimum percentage of California operation per the appropriate funding level for the duration of the project life. Equipment is permitted to temporarily travel out-of-state for periodic maintenance, if outlined in the contract between the local agency and equipment owner.</li> <li>• Commit to at least a majority of the percentage California operation being within the four California trade corridors for the duration of the project life.</li> <li>• Commit to a project life of 15 years.</li> <li>• Commit to the funded locomotive only using California CARB diesel fuel unless CARB approves an exemption and it is included in the contract between the local agency and equipment owner.</li> <li>• Scrap or ban the old (uncontrolled through Tier 1+) engine/locomotive from California operation for (replacements or retrofits involving engine replacement) If upgrading a Tier 2 engine/locomotive, the Tier 2 equipment may remain in California and a Tier 0 through Tier 1+ engine/locomotive must be scrapped or banned from California operation (replacements and retrofits involving engine replacement) .</li> <li>• Install an active GPS device on both the old (if not scrapped) and the new equipment, fund and commit to data collection, and report location data</li> </ul>										

Locomotives and Railyards (cont.)

<p>Option (5) Locomotive Emissions Capture and Control System</p>	<p>Partial funding for the lower of 80% of eligible costs or a level commensurate with a cost effectiveness of at least 0.10 pounds of weighted emissions reduced per State dollar invested for the purchase and installation of a CARB-approved locomotive emission capture and control system (a.k.a. hood or bonnet) to reduce diesel PM and NOx emissions from freight locomotives.</p>
	<p>Eligible costs include the purchase and installation of the emission treatment system and ducting, and hoods/bonnets necessary to connect to locomotives. Ineligible costs include those associated with increasing the capacity of electrical power transmission to the facility, locomotive modifications to accept capture and control system, locomotive or other acquisition and modification for a portable system, design, engineering, consulting, environmental review, legal fees, permits, licenses and associated fees, taxes, utility construction or metered costs, insurance: operation, maintenance, and repair.</p>
<p>Requirements</p>	<p>In addition to the General Requirements listed previously, equipment owner shall:</p> <ul style="list-style-type: none"> <li>• Commit to 100% operation within the four California trade corridors for the duration of the project life</li> <li>• Commit to a project life of 10 years.</li> <li>• Document the system is commercially available and achieves an overall capture and control efficiency rate of at least 80% for the removal of NOx and PM.</li> <li>• Demonstrate system performance and efficiency with source testing prior to funding and annually thereafter by capturing emissions from an operating locomotive undergoing diagnostic procedures.             <ul style="list-style-type: none"> <li>○ Performance measures include: (i) no visible emissions after bonnet is connected to the locomotive (opacity &lt;20%); and (ii) establish overall system efficiency rate is at least 80% using CARB approved methods for flow rate (Methods 1 to 4), NOx (CARB Method 100) and PM (CARB Method 5). Any alternative test methods must be approved by CARB</li> </ul> </li> <li>• Obtain a 10-year manufacturer's warranty (including labor and materials) to repair and/or replace system component(s) as needed to correct any mechanical electrical or control system equipment or installation problems, which may cause significant loss of capture, treatment efficiency or usability. The manufacturer's warranty may exclude minor items that are subject to normal wear and tear if approved by CARB</li> <li>• Comply with all local permitting requirements.</li> </ul>
<p>Excluded Funding Components</p>	<ul style="list-style-type: none"> <li>• Electricity costs required to operate the hood control system.</li> <li>• Other operation and maintenance costs.</li> </ul>