Mitigation Grant Programs
Port of Long Beach

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Introduction

The Port of Long Beach is the second largest seaport in the United States and a major gateway for trade in and out of the country. Yet air pollution from the trucks, cargo-handling equipment, ships, and trains that service this major goods movement center has a significant impact on the local community.

To ease these impacts the Port developed the Mitigation Grant Programs (Grant Programs), which aim to minimize the cumulative impacts of port operations, reduce health risks for vulnerable populations, and improve the quality of life in surrounding communities. The Grant Programs provide funding for projects outside of Port boundaries that reduce exposure to air pollution and lessen community health impacts, particularly for people sensitive to air pollution such as children, the elderly, and those with respiratory/cardiopulmonary illnesses. When the Port approves a development project with cumulative impacts that cannot be mitigated fully within the project, it can add funds to the program budgets.

To date, the Port has contributed $17.4 million to the mitigation grant fund. Nearly $10 million have been awarded to schools, youth facilities, hospitals, and health care organizations for projects that mitigate port-related pollution impacts. These projects range from simple facility upgrades, like indoor air filters, to more comprehensive programs, like asthma outreach initiatives and renewable energy projects. In all cases the Port has tapped into the community's existing infrastructure to create cost-effective mitigation programs embraced by local residents, as evidenced by the Port's recent recognition from the Westside Schools for Clean Air and the Interfaith Community Organization, two organizations representing port-adjacent communities long burdened by goods movement-related impacts.

Goals and Objectives

The goal of the Grant Programs is to reduce the cumulative community impacts of port-related air pollution associated with new development projects. The Port accomplishes this goal through two major objectives:

1. Fund projects or programs that reduce exposure to port-related air pollution, and
2. Fund projects or programs that reduce the human health impacts of port-related air pollution.

More specifically, the Port funds facility improvement projects (indoor air filters, door and window seals, pollution-capturing trees), health care programs to minimize the effects of respiratory/cardiopulmonary ailments, and capital projects to reduce greenhouse gas emissions.

Discussion

A. Background

The Port of Long Beach is the second largest seaport in the United States and a major gateway for trade in and out of the country. Yet air pollution from the trucks, cargo-handling equipment, ships, and trains that service this major goods movement center has a significant impact on the local community. The South Coast Air Basin, where the Port is located, has some of the worst air quality in the nation. Port-related sources (including those from the neighboring Port of Los Angeles) account for roughly 10% of the region's air pollution.

The Port has worked hard over the past few years to reduce its environmental impacts. Five years ago, the Port of Long Beach, in conjunction with the Port of Los Angeles, adopted the Clean Air Action Plan (CAAP) to improve air quality and reduce health risks. The CAAP includes a goal of reducing port-related residential cancer risks in the local communities by 85% by the year 2020. In addition, every new development project requires stringent measures to prevent increases in—and when possible, to reduce—air pollution.

In 2009, the Port sought approval for the Middle Harbor Redevelopment Project to upgrade two outdated container-cargo terminals with the cleanest technology available, more than doubling cargo capacity while slashing air pollution by 50% from current levels. Even with these improvements, however, the Port recognized that its operations resulted in cumulative impacts on the community. These impacts required mitigation. But because Middle Harbor already incorporated the most environmentally sound practices in design and construction, the Port needed to broaden its reach to mitigate these impacts. To that end, the Port created three Mitigation Grant Programs to provide funding for projects *outside* of Port boundaries that will lessen community health impacts. While these programs were created initially to address impacts from the Middle Harbor project, the programs are ongoing and will be used to address impacts from other projects into the future.

B. Objectives and Methodology

The Grant Programs are incorporated into environmental documents as mitigation for new development projects. When the Port approves a new project expected to have cumulative impacts, the Board of Harbor Commissioners can choose to add money to the Mitigation Grant Fund. The funding formula is based on the proposed project's impacts, estimated costs for mitigation (air filters, health care programs, etc.), and the projected number of beneficiaries.

These funds are doled out to the community through a competitive grant process. Grant applications are evaluated by Port staff and the Mitigation Grants Advisory Committee, representing regulatory agencies, the goods movement industry, and the community. Grants must fund projects that reduce exposure to port-related air pollution or the human health impacts of this pollution.

C. Award Criteria

1. Benefits to Environment and Community

The Port has identified a list of projects proven to reduce exposure to and health impacts from air pollutants. These projects were selected for their emissions reduction potential and cost-effectiveness as determined by manufacturing data, published studies, and certifications from environmental regulatory agencies. The projects include:

- Air filters fitted to existing ventilation systems to reduce indoor air pollution exposure
- Stand-alone air filtration systems
- Landscaping projects to capture diesel particulate matter (DPM) and to reduce noise from freeways, railways, and other goods movement corridors
- School bus retrofits and replacements to reduce children's exposure to DPM
- Emergency generator retrofits and replacements
- Funding for health care programs that diagnose, treat, and educate people about asthma and other respiratory/cardiopulmonary illnesses aggravated by air pollution
- Funding for renewable energy and energy-efficiency projects that reduce greenhouse gas emissions

These strategies result in immediate reductions to indoor air pollution and minimizing exposure to air pollutants, particularly for people sensitive to air pollution such as children, the elderly, and those with respiratory or cardiopulmonary illnesses. In addition, the Grant Programs allow applicants to propose cost-effective, emission-reducing projects not mentioned in the guidelines in order to maximize the community's options.

In working with the Mitigation Grants Advisory Committee, the Port developed criteria, including technical specifications, maintenance procedures, and detailed implementation plans, for each project type to ensure maximum pollution reduction. In addition, priority is given to projects that serve the greatest number of people per dollar spent and to beneficiaries closest to the Port who are most impacted by port-related pollution.

2. Independent Involvement and Effort

The Grant Programs were conceived, developed, and implemented entirely by Port staff with assistance from the community advisory committee. The Grant Programs were not the result of a legal settlement or decree; rather, they were initiated by the Port as a sensible, cost-effective mitigation measure for cumulative port-related impacts.

3. Creativity

The Grant Programs are a unique approach to mitigating port-related pollution impacts, and they mark the first time the Port has attempted to ease community health impacts by directly funding pollution-reduction projects outside the Harbor District. In the past, the Port has minimized its impacts by controlling pollution at the source, using technology and operational changes to lessen air emissions from trucks, ships, trains, and cargo-handling equipment. But the inability to mitigate

all health impacts through on-site controls necessitated an innovative strategy, one never before tried by a United States seaport.

The Grant Programs provide the community with a menu of pre-certified, cost-effective projects to reduce the impacts of air pollution, but they give community members the flexibility to select the project that works best for their particular situation. Air filters may work in some schools; other schools may benefit more from landscaping projects to capture particulate matter. Some health care organizations may choose to make home visits to patients with asthma; others may want to do large-scale education campaigns on how to minimize pollution exposure. The Grant Programs empower local communities with technical expertise and provide funding, but ultimately they let the community decide how best to achieve the reductions.

The Grant Programs may be the only ones of their kind in the country: a voluntary effort by a seaport to reduce the human health impacts of air pollution in the community through a competitive grant process. This unique mitigation measure has the potential to bring about significant improvements in port-adjacent communities.

4. Project Results

The Port has allocated awards for two rounds of grant funding. In the first round, the Port awarded $4.7 million to 73 schools, youth facilities, and child-care providers. These projects included air filter installation, door and window replacement, and landscaping projects. Roughly 33,000 Long Beach children will benefit from these projects.

In the second round of funding, the Port awarded $5 million to 10 health care programs. These programs included mobile clinics to provide respiratory diagnosis in the field, asthma education, community health worker visits to people with asthma, and a cardiopulmonary diagnosis laboratory to detect pollution-related heart ailments. These programs are anticipated to reach more than 250,000 community members.

Strategies funded by the Mitigation Grant Program are projected to bring the following benefits:

- *Air filters*: Indoor air pollution is reduced by at least 90% in facilities with high-performance filters or stand-alone units.
- *Landscaping projects*: Tree species funded through the Grant Programs capture 30% to 80% of ultrafine diesel particles and reduce noise, if planted in sufficient amounts and along the borders of high-emitting sources like roadways and rail lines.
- *School bus retrofits/replacements*: Diesel particulate filters (DPFs) funded through the Grant Program reduce DPM by at least 85% as verified by the California Air Resources Board (CARB); the Grant Programs also provide partial funding to replace diesel buses with alternative-fuel buses like those powered by clean-burning liquefied natural gas (LNG).
- *Emergency generator retrofits/replacements*: DPFs funded through the Grant Programs reduce DPM by at least 85% as verified by CARB; the Grant Programs also provide partial funding to purchase alternative-fuel or retrofit-capable generators if retrofitting is not possible.
- *Health care programs:* Varies by program, but outcomes include fewer missed work/school days due to asthma, increased quality of life with asthma, and decreased asthma-related emergency room visits.

5. Cost-Effectiveness

The Port uses cost-effectiveness as a key criteria when evaluating grant proposals, and favors projects that benefit the largest number of people per $10,000. As a result, the Grant Programs as a whole are extremely cost-effective. Based on the awards to date, the Grant Programs have a cost-effectiveness ratio of $34 per beneficiary, which makes it one of the Port's most inexpensive mitigation measures. Moreover, the community goodwill generated by this program is incalculable.

6. Transferability

The Grant Programs can easily be replicated by other seaports, requiring only upfront resources to develop the grant guidelines and the financial means to provide the grants. Because these programs are designed as mitigation with opportunities to leverage outside resources, all of these requirements can be met.

To begin with, the programs can be developed in-house with port staff and community involvement. Members of the Port's all-volunteer Mitigation Grants Advisory Committee drew on their diverse backgrounds, community insight, and technical knowledge to help develop the specific grant guidelines and procedures. Committee members used their community connections to bolster the outreach effort, and they attended grant workshops to answer questions and to serve as Grant Programs ambassadors. In essence, the partnership enabled the Port to increase the value of its monetary contribution through in-kind outreach support and technical expertise—a key strategy in building program capacity and leveraging resources. Plus, the projects themselves—installing air filters in school classrooms and hospitals, planting trees, and retrofitting vehicles and generators—are simple and easy to implement.

Second, these programs are financially feasible because they are tied to development projects. Port development projects improve efficiency and in some cases expand cargo-moving capacity, thus boosting Port revenue. By taking a small amount of this projected revenue and applying it to mitigation efforts, including the Grant Programs, the Port is able to enhance its operational infrastructure while reducing pollution near local communities. Other seaports can do the same.

Conclusion

The Mitigation Grant Program is the only one of its kind in the country: a voluntary effort by a seaport and its community partners to reduce the human health impacts of air pollution through a competitive grant process. This unique approach to mitigation has the potential to minimize the cumulative impacts of port operations while improving the quality of life in local communities.