

Case Study

Being a Good Neighbor Requires Real-Time Alerts and Defensible Air-Quality Data

A leading national developer used integrated weather, noise, and particulate matter monitoring to produce credible air quality data and achieve regulatory compliance.



Project

Alameda Point
Redevelopment

Services

3x Dust Sentry, Aeroqual Cloud
Plus

Location

Alameda, California, USA

Measurements

PM₁₀, PM_{2.5}, wind and noise

Date

2019

Sector

Remediation



Being a good neighbor requires real-time alerts and defensible air-quality data

A leading national developer used integrated weather, noise, and particulate matter monitoring to produce credible air quality data and achieve regulatory compliance. This data proved to the local community they were controlling dust far below stringent Bay Area clean air ordinances. Two-way communication allowed the consultant to keep the system calibrated remotely, providing real-time alerts on wind speed and PM₁₀ to help sub-contractors take action. Sharing Aeroqual Cloud Plus trends and reports directly with the community earned their trust, illustrated they were not the source of nuisance dust, and saved over \$60,000 in cleaning claims.

Urbanizing a former naval air station in san francisco bay after residents have moved in

Catellus, a national leader in mixed-use development, is in the final phase of transforming the former site of the US Navy's Alameda Fleet Industrial Supply Center. The finished project will span 218 acres devoted to office, retail, residential, and waterfront promenade. Residents have moved into the homes, the new school is in session, and businesses are open.

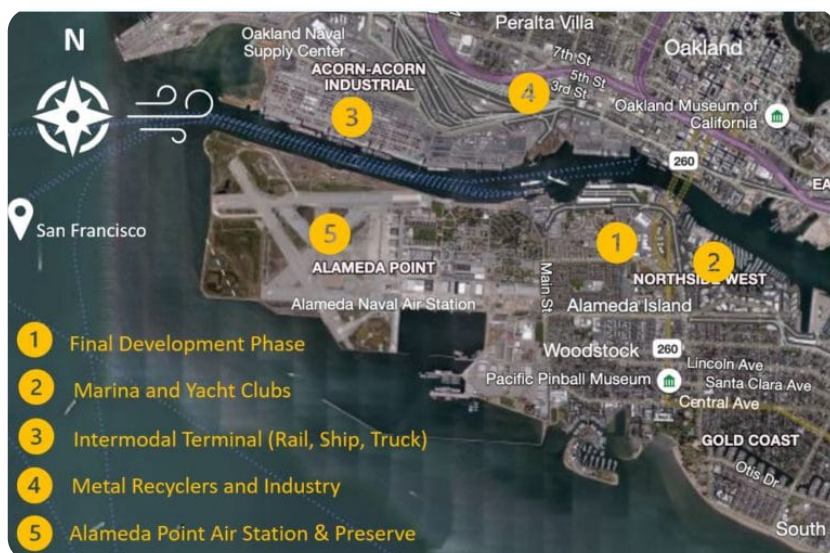
"We pride ourselves on being a good neighbor and partner to the city."

Bill Kennedy
Catellus

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Still, Bill Kennedy, VP of Construction at Catellus, knew that meeting some of the most stringent ambient air quality standards (AAQS) in the world is not enough when carrying out construction work in close proximity to residents and local businesses. "We pride ourselves on being a good neighbor and partner to the city," states Kennedy. This means going to great lengths to restrict and control the spread of dust and particulate matter, which can have significant community impacts long before they exceed regulatory standards.

The location of the final phase of development is particularly challenging. Prevailing westerly winds blowing down the Oakland estuary pick up dust from the intermodal terminal, recycling works, and other construction sites. These winds then blow across the Catellus site, which shares an eastern boundary with the community and a busy marina housing multiple yacht clubs.



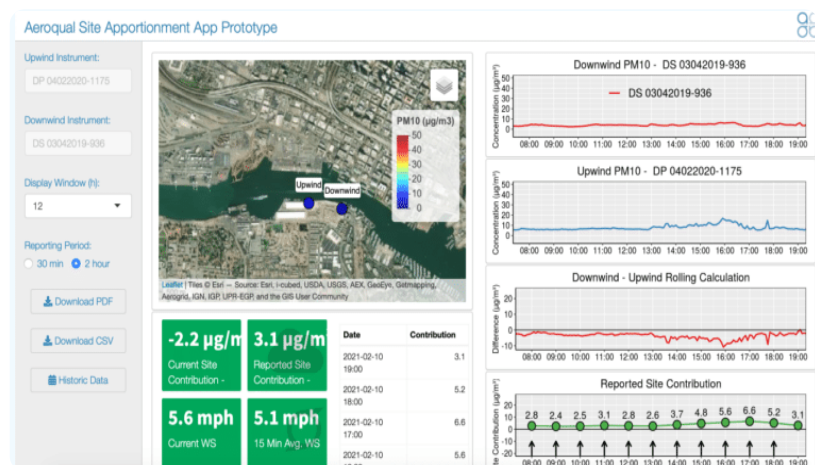
Alameda Point Redevelopment Plan.

Catellus engaged in proactive community outreach, explaining the development vision, their activities, and their dust mitigation plan. The community, while excited for the redevelopment, is restrictive in the amount of dust they will tolerate. Kennedy knew Catellus needed a solution that would provide accurate, defensible data to protect these community relationships.

Peace of mind with real-time air quality monitoring and alerts

Kennedy conducted an exhaustive search to find a portable air quality monitor that had accurate, auto-calibration sensor technology, the ability to send real-time text alerts, and did not require hardwired mains power. He selected the Aeroqual Dust Sentry PM₁₀ monitor with Cloud Plus software package and asked Vista to configure a boundary monitoring solution.

Three Dust Sentry systems were located on site, one on the upwind boundary, one on the downwind boundary, and one fixed monitoring station adjacent to the sensitive marina area. A fully integrated meteorological station on one of the Dust Sentry's added real-time wind direction, wind speed, relative humidity, temperature, and atmospheric pressure to the three PM₁₀ measurements being sent to Aeroqual Cloud.



This data was then shared with engineers and stakeholders via a site dashboard. Diagnostic alerts were configured, which sent email and SMS text messages to qualified personnel when triggered. The client could then remotely access control parameters and recalibration tools. This ensured the Dust Sentry systems operated optimally, preserving the accuracy, reliability, and integrity of the air quality data.

Exceedance alerts were configured, including a stop work alert for wind speeds higher than 20mph and a mitigation warning for particulate matter when PM₁₀ is greater than 50µg/m³ which is a level two thirds of the regulatory limit of PM₁₀ greater than 75µg/m³. Aeroqual Cloud allowed easy configuration of who would receive text and email alerts.

This enabled superintendents of the contractors working at the time of the exceedance to also receive alerts, ensuring prompt corrective action. For example, applying more water, or changing sweeping or concrete loading methods. An acknowledgement alert at PM₁₀ less than 40µg/m³ gave stakeholders peace of mind that mitigation methods had been effective, without the need to stop work.

- **100% compliance with air ordinance of PM₁₀ < 75µg/m³**
- **Nuisance dust below 20 µg/m³**
- **Over \$60,000 saved in cleaning**

Chuck Bove, Principal and CEO at Vista remarked, "the solution works really well, and it was valuable to be able to upload and download data remotely and to have a permanent record of it."

Aeroqual Cloud Plus was used to calculate the amount of PM₁₀ dust moving onto site at the west boundary and how much was moving off the east boundary, showing the site's contribution to nuisance dust. The software calculated, reported, and trended baseline, average, and peak values of PM₁₀. This data was combined with wind roses to prove the low impact the site had on dust creation in the community.

Reliable, accurate, actionable information builds trust, reduces claims

Catellus and Vista used the real-time information from the Aeroqual Dust Sentry PM₁₀ monitors to minimize off-site impacts of fugitive dust. Kennedy proactively shared with community members the investment that Catellus had made in being a good neighbor. Catellus took a conservative approach to setting alerts, deciding on nuisance levels that are two thirds of what the regulation required.

When faced with an angry yacht owner whose gel-coating was ruined by dust, he was able to prove the wind direction was bringing metal dust from the recycler and railways to the northwest. Similarly, the data showed a business owner claiming for overages in repainting that the source of dust was from upwind of the site.

Community meetings previously disrupted by accusations of, “the dust was terrible yesterday,” were quickly calmed by sharing reports and trends showing the levels substantially below 20µg/m³. The real-time alerts and defensible data had a positive effect on community relations, and a measurable financial impact – reducing cleaning costs by \$60,000 in two months.

“Everything that the equipment promised was delivered,” says Bove. “We have not had any issues or problems with the monitors, they have been reliable and really haven’t missed a step.” Aeroqual’s integrated sensor and software system markedly reduced the time and hassle that might normally be associated with a similar project. In the effort by air quality professionals to protect workers and communities from air and dust pollution, Aeroqual’s technology drove effective decision making with data that is not only defensible but actionable.

About



Catellus

Catellus is a master developer focused on creating some of the most innovative and sustainable mixed-use developments in the nation. Catellus has nearly 30 years of experience transforming former brownfields, military land, and airports into developments with retail, commercial, residential, and other public uses. Catellus delivers on all aspects of a project, including site planning, entitlements, public financing, and sustainable design.

Aeroqual

Aeroqual develops integrated monitoring and software systems underpinned by industry-leading sensor technology to support environmental, health, and safety professionals in protecting people and the planet from the impact of air pollution. That’s why governments, industry, researchers, and consultants trust Aeroqual to deliver actionable data for their air quality monitoring projects.



Vista Environmental Consultants

Vista Environmental Consultants deliver tailored common-sense solutions, rapid response, and safe construction practices for municipalities, private industry, and government agencies throughout the Western USA. Vista has successfully performed over 1,000 remediation projects.



GEO-Instruments

GEO-Instruments provides geotechnical, structural, and environmental monitoring services from 13 offices across the USA. GEO-Instruments is an Aeroqual partner and distributor in North America, specializing in air quality monitoring, software, and accessories.