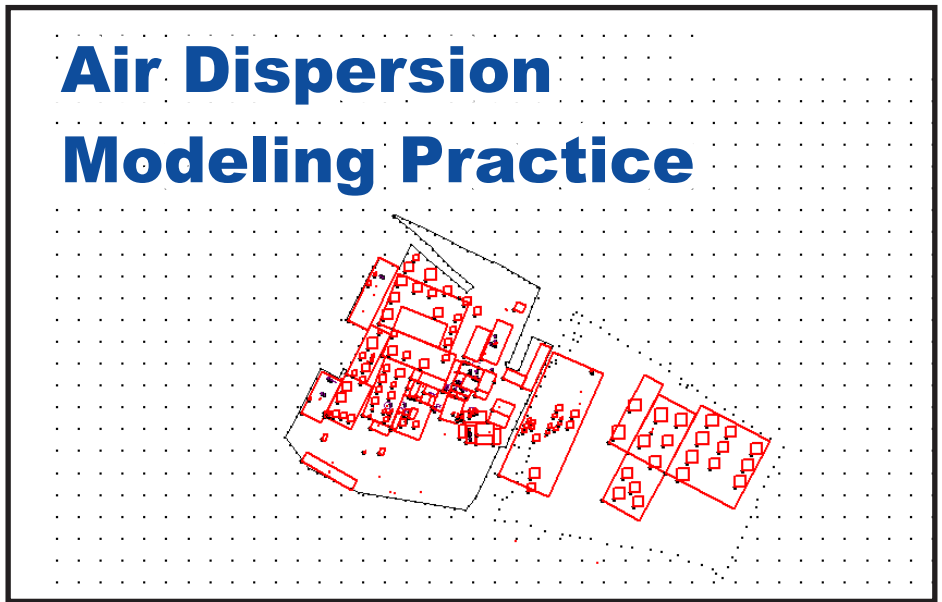




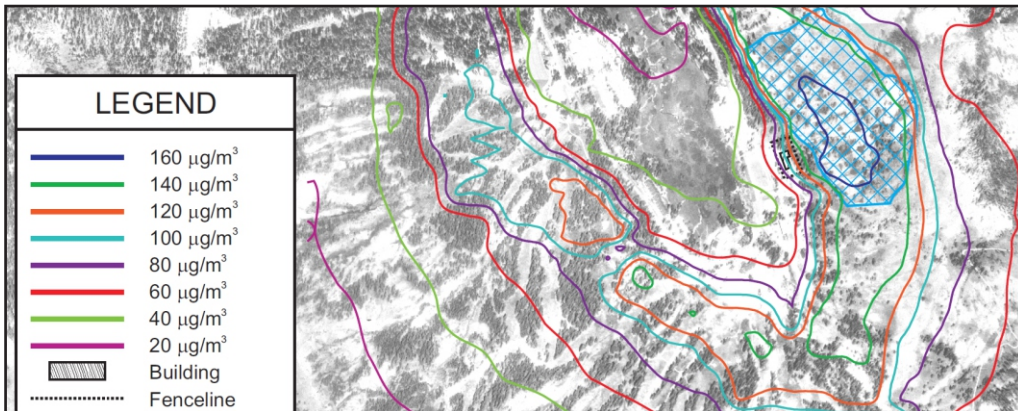
Air Dispersion Modeling Practice

Ashworth Leininger Group's air dispersion modeling practice is a key component of many air permitting projects such as New Source Review (NSR) or Prevention of Significant Deterioration (PSD). Air dispersion modeling is also performed for Environmental Impact Reports and Statements to help determine whether a project's air quality impacts are significant. As illustrated below, ALG has the capabilities to:



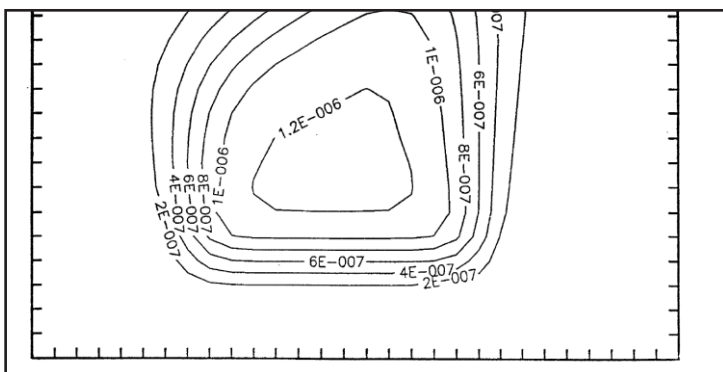
- Determine impacts of criteria pollutant emissions from various industrial facilities in flat, simple and complex terrain settings using numerous EPA-approved models including AERMOD and ISCST3;
- Determine potential visibility and acid deposition impacts at distant receptors using the CALPUFF model;
- Assess the potential impacts of accidental releases using the RMP*Comp and ALOHA models;
- Determine the impacts of traffic emissions, including roadways with intersections, using CALINE4 and CAL3QHC; and
- Determine impacts of emissions from offshore activities using OCD5.

Traditional Criteria Pollutant Modeling

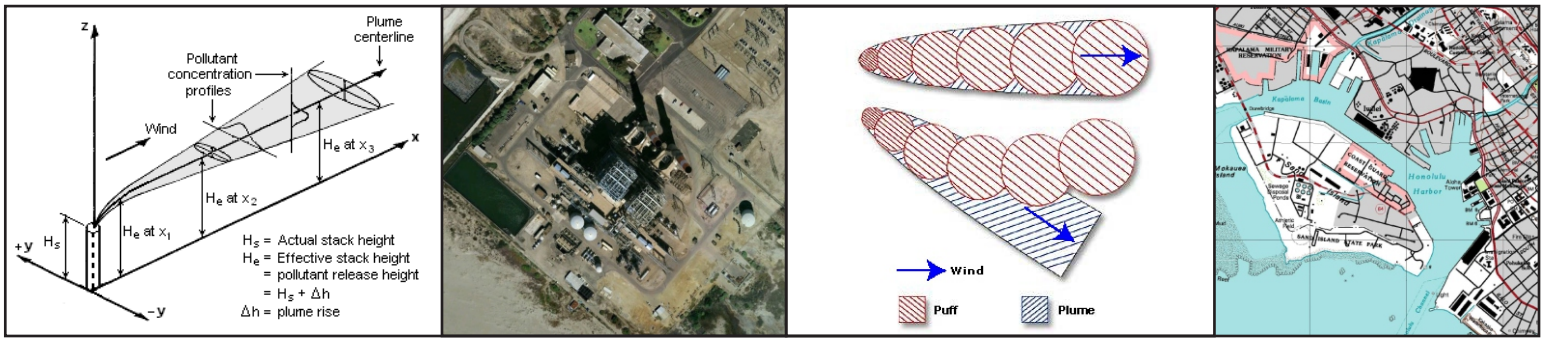


ALG staff has decades of combined modeling experience to draw from, including extensive experience with the EPA's currently recommended workhorse model, AERMOD. ALG staff is knowledgeable of modeling requirements for EPA, as well as specific requirements of many state and local regulatory agencies.

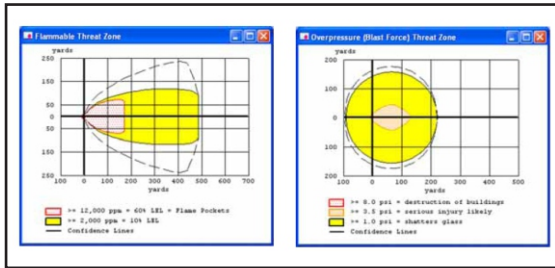
Visibility and Acid Deposition Modeling



ALG has used the CALPUFF modeling system to determine the visibility and acid deposition impacts for receptors greater than 50 km from the source (e.g., in Class I areas). CALPUFF has been run using full three-dimensional fields of meteorological and geophysical data, and in "Lite" mode using time-varying but spatially homogeneous data fields. CALPUFF has also been used to calculate concentrations of NO_2 , SO_2 , and PM_{10} for comparison to significance thresholds established by Federal Land Managers for Class I areas.



Accidental Release Modeling



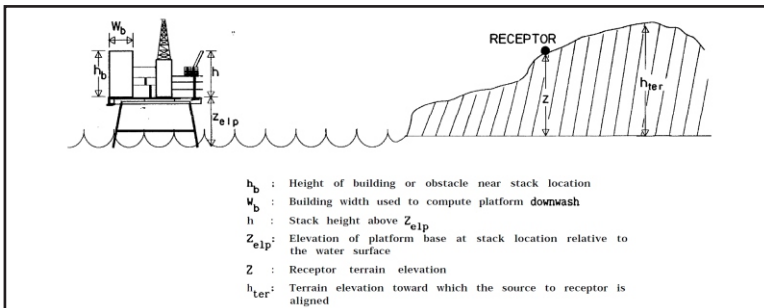
ALG staff have used accidental release dispersion models such as ALOHA to assess short-term impacts of releases from ruptured vessels and pipes for a variety of hazardous chemicals, including hydrogen sulfide, chlorine, anhydrous ammonia, and ethylene oxide. Additionally, for flammable gases and liquids, EPA/CEPPO-approved Offsite Consequence Analysis methods have been used to determine the effects of vapor cloud fires and explosions, pool fires, and BLEVEs.

Traffic Emissions Modeling



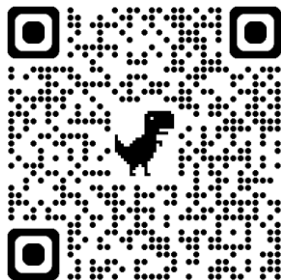
ALG staff has used line-source models such as CALINE4 to determine the impacts of increased traffic on roadways and complex intersections. These analyses are typically performed in the context of environmental impact reports and assessments for transportation projects to determine if there is concern about the creation of CO Hot Spots.

Offshore Emissions Modeling



ALG has applied the Offshore and Coastal Dispersion model (OCD5) to determine impacts of oil platforms and marine vessels in the Gulf of Mexico and California's Santa Barbara Channel. For Gulf projects, the OCD5-calculated impacts were compared to PSD increments, and for Santa Barbara Channel project, the impacts were compared to SBCAPCD Rule 803 increments.

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