

# Policy Strategy C – Building Specific Tactics and Development Patterns

The following set of policies are directed to mitigating air pollution impacts both to and from private developments – e.g., developments that involve residential living or involve the siting of other sensitive land uses. While many protective policies exist in local zoning and development codes and conditions, the intention in this recommendation is to focus and maximize the full application of protective best practices as standard condition for new or modified developments sitting near (within 1,000 feet) of significant air pollution sources or sitting within a designated air pollution exposure zone or industrial-residential interface zone.

Many of these “best practice” policies specifically relating to mitigating air pollution have been highlighted in the Air District’s [Planning Healthy Places](#) guidance as well as the Air District’s 2017 [Clean Air Plan](#) and the 2019 [West Oakland Community Action Plan](#).

## Policy Recommendation: Building-Specific Development Standards

- **Consideration of Building Site Design** - Place sensitive land uses as far away from emission sources (including loading docks, busy roads, etc.) as is feasible. Place open space, commercial buildings, or parking garages between sensitive land uses and air pollution sources. Locate operable windows, balconies, and building air intakes as far away from any emission source as is feasible. Consider limiting sensitive land uses on the ground floor units of buildings near non-elevated sources, e.g., ground level heavily traveled roadways and freeways. Phase residential developments such that homes nearest the freeway are built last, if feasible.<sup>1</sup>
- **Specific exposure reduction strategies** - Install Air Filters (rated at a minimum efficiency reporting value MERV 16 or higher in buildings associated with sensitive land uses (e.g., schools, residences, hospitals). Use building materials and/or design that limit unfiltered infiltration of outside air, such as air sealing or maintenance of positive pressure within the building interior including in residential units and other habitable and common spaces such as corridors.<sup>2</sup>
- **Maximize TDM (traffic demand management) strategies** for new or modified multi-unit development to highest level feasible: including parking minimums, mandated parking spaces for car-sharing programs, transit subsidies, and bike/ped facilities.

<sup>1</sup> Considerations should be taken for building envelop, wind patterns, air pollution flows and any urban canyon effects that may negate or worsen the intended mitigations (See Near Roadway Report, CARB, 2017).

<sup>2</sup> High efficiency filters in ventilation systems can remove from 50-99 percent of particles in the air. However, research shows that filtration technologies for gaseous pollutants (VOCs) are variable in their effectiveness; some remove certain VOCs well, but not others. MERV 13 to MERV 16 filters remove a portion of the ultrafine and submicron particles emitted from vehicles and potentially reduce incoming outdoor PM 2.5 particles by up to 97-98 percent compared to 12 percent for MERV 7 or lower filters. True HEPA (high efficiency particulate arrestance) filters—equivalent to MERV 17 to MERV 20—remove 99.97 percent to 99.999 percent of particles less than 0.3 microns (µm). HEPA filters are available for use in residential applications, but they are not yet in widespread use in residences (see CARB Report, 2017, 36-37).

- **Reduce truck impacts:** Limit truck operation hours; prohibit truck yards, services, repair and fueling within freeway air pollution exposure zone corridors and within designated industrial-residential interface areas. Require electrical connections for TRU (truck refrigeration units) and electric trucks in such businesses.
- **Replace diesel generator engines and BUGS (back-up generators)** to CARB's Tier 4 level when closest to sensitive receptors. Include best available zero emission generator technology if feasible for battery storage and fuel cells.
- **Construction stipulations on development projects** to use only the cleanest equipment, vehicles, and fuel during construction.
- **Create continuous berms** to shield playgrounds, open spaces, and social gathering places from off-site pollution sources such as busy roads - especially for pollution sources that are upwind. Install vegetative buffers and street trees as on-site mitigations or off-site mitigations between sensitive land uses and emission source(s).
- **Mitigate existing environmental hazards:** Identify and implement "Brownfield" clean-ups and mitigate any potential dust-formation conditions for idle or legacy contaminated development sites. Require identified or needed site environmental remediation as a part of any significant permit renewal or modification.
  - Encourage the preservation of any floodplain/wetland portion on a site and identify as open space opportunities for carbon sequestration and/or wetland ecology enhancements.
  - For structures, require the remediation of any lead-based paint (especially during constructions or major modifications).
  - Target program funds to identify and remediate triggers of poor and unhealthy indoor air quality such as mold, mildew, asbestos.

**Other Building specific strategies:**

- Requirements for business licensing that businesses must describe current and proposed truck visits per day.
- Install high-efficiency filtration systems at schools, community centers, retirement homes so that they also may serve as "clean air centers."
- Place restrictions on truck parking and idling
- Require disclosure of prevalent or potential existing air pollution impacts to renters/tenants.
- Place multi-story parking garages, when possible, as a barrier between residences and freeways or other pollution sources. These can also include green roofs and green walls in their designs.

**CASE STUDY – HBX Zone, Oakland: Creating a Successful Interface Buffer Zone - Potential Land-Use Allowances to Consider**

Within any of the described air pollution exposure zones or industrial-residential interface zones (or similar buffers), the intention should be to manage a transitioning of impactful land-uses from higher intensity industrial to sensitive/residential uses over a 500ft. to 1,000 ft. distance at a minimum.

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A good example of how these transitions can be encouraged and codified in specific zoning requirements can be seen with the City of Oakland's "Housing and Business Mix" zone (HBX) as an example transition zone. The HBX, adopted in 2006, specifically enables/encourages home-based small businesses as well as cottage/craft and live work uses. The zone limits single activities for general warehousing that exceed 25,000 sf and does not permit container storage, oil and gas storage, freight terminals, corporation yards, truck terminals, or truck services as primary activities.

In addition, other requirements could be added to such zones to not allow additional particulate-matter (PM) emitting sources or large truck-oriented uses in such transition area zones. In general, there should not be allowed food gardens, schools, or sensitive uses within 500 ft. of an industrial boundary or freeway. Local cities or counties may wish to consider establishing clean air centers and resiliency hubs complete with air filtration units for residential homes, schools, community centers, senior centers, and libraries in such zones.