

Appendix E: Air Quality Tables

The following tables are provided in support of Section 3.2 of the Environmental Impact Statement (EIS).

Table 1. National and Washington State Ambient Air Quality Standards

Pollutant	Federal		State
	Primary	Secondary	
Carbon monoxide (CO)			
8-hour average ^a	9 ppm	No standard	9 ppm
1-hour average ^a	35 ppm	No standard	35 ppm
Ozone			
8-hour average ^b	0.075 ppm	0.075 ppm	0.075 ppm
Total suspended particles (TSP)			
Annual average	No standard	No standard	60 µg/m ³
24-hour average ^c	No standard	No standard	150 µg/m ³
Particulate matter (PM)—PM10			
24-hour average ^c	150 µg/m ³	150 µg/m ³	150 µg/m ³
Particulate matter (PM)—PM2.5			
Annual average	15 µg/m ³	15 µg/m ³	15 µg/m ³
24-hour average ^d	35 µg/m ³	35 µg/m ³	35 µg/m ³
Lead			
Quarterly average	1.5 µg/m ³	1.5 µg/m ³	1.5 µg/m ³
Sulfur dioxide (SO ₂)			
Annual average	0.03 ppm	No standard	0.02 ppm
24-hour average ^a	0.14 ppm	No standard	0.10 ppm
3-hour average ^a	No standard	0.50 ppm	No standard
1-hour average ^e	No standard	No standard	0.40 ppm
Nitrogen dioxide (NO ₂)			
Annual average	0.053 ppm	0.053 ppm	0.05 ppm
1-hour average ^f	0.100 ppm	No standard	No standard

ppm = parts per million; µg/m³ = micrograms per cubic meter

Note: Annual standards are never to be exceeded. Short-term standards are not to be exceeded more than once per year unless noted.

^a Not to be exceeded once per year.

^b To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.075 ppm (effective May 27, 2008).

^c Not to be exceeded more than once per year on average over 3 years.

^d To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 35 µg/m³.

^e 0.25 ppm are not to be exceeded more than two times in 7 consecutive days.

^f To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm.

Source: WAC 173-470-475

Table 2. Potential GHG Reduction Mitigation Measures

Reduction Measures	Comments
Site Design	
Retain and enhance vegetated open spaces.	Retains or increases sequestration by plants.
Plant trees and vegetation near structures to shade buildings.	Reduces onsite fuel combustion emissions and purchased electricity, and enhances carbon sinks.
Minimize building footprint.	Reduces onsite fuel combustion emissions and purchased electricity consumption, materials used, maintenance, land disturbance, and direct construction emissions.
Design water efficient landscaping.	Minimizes water consumption, purchased energy, and upstream emissions from water management.
Minimize energy use through building orientation.	Reduces onsite fuel combustion emissions and purchased electricity consumption.
Building Design and Operations	
Apply LEED standards (or equivalent) for design and operations.	Reduces onsite fuel combustion emissions and offsite/indirect purchased electricity, water use, waste disposal.
Purchase Energy Star equipment and appliances for public agency use.	Reduces onsite fuel combustion emissions and purchased electricity consumption.
Incorporate onsite renewable energy production, including installation of photovoltaic cells or other solar options.	Reduces onsite fuel combustion emissions and purchased electricity consumption.
Design street lights to use energy-efficient bulbs and fixtures.	Reduces purchased electricity.
Construct "green roofs" and use high-albedo roofing materials.	Reduces onsite fuel combustion emissions and purchased electricity consumption.
Install high-efficiency HVAC systems.	Minimizes fuel combustion and purchased electricity consumption.
Eliminate or reduce use of refrigerants in HVAC systems.	Reduces fugitive emissions. Compare refrigerant usage before/after to determine GHG emission reduction.
Maximize interior day lighting through floor plates, increased building perimeter and use of skylights, clerestories, and light wells.	Increases natural/day lighting initiatives and reduces purchased electrical energy consumption.
Incorporate energy efficiency technology such as super insulation motion sensors for lighting and climate-control-efficient, directed exterior lighting.	Reduces fuel combustion and purchased electricity consumption.
Use water-conserving fixtures that surpass building code requirements.	Reduces water consumption.
Reuse gray water and/or collect and reuse rainwater.	Reduces water consumption with its indirect upstream electricity requirements.
Use recycled building materials and products.	Reduces extraction of purchased materials, possibly reduces transportation of materials, encourages recycling and reduction of solid waste disposal.
Use building materials that are extracted and/or manufactured within the region.	Reduces transportation of purchased materials.
Use rapidly renewable building materials.	Reduces emissions from extraction of purchased materials.
Conduct third-party building commissioning to ensure energy performance.	Reduces fuel combustion and purchased electricity consumption.
Track energy performance of building and develop strategy to maintain efficiency.	Reduces fuel combustion and purchased electricity consumption.

Reduction Measures	Comments
Transportation	
Size parking capacity to not exceed local parking requirements and, where possible, seek reductions in parking supply through special permits or waivers or county-specific parking standards or incentives.	Reduced parking discourages auto-dependent travel, encouraging alternative modes such as transit, walking, and biking. Reduces direct and indirect VMT.
Develop and implement a marketing/information program that includes posting and distribution of ridesharing/transit information.	Reduces direct and indirect VMT.
Subsidize transit passes. Reduce employee trips during peak periods through alternative work schedules, telecommuting, and/or flex time. Provide a guaranteed-ride-home program.	Reduces employee VMT.
Provide bicycle storage and showers/changing rooms.	Reduces employee VMT.
Use traffic signalization and coordination to improve traffic flow and support pedestrian and bicycle safety.	Reduces transportation emissions and VMT.
Apply advanced technology systems and management strategies to improve operational efficiency of local streets.	Reduces emissions from transportation by minimizing idling and maximizing transportation routes/systems for fuel efficiency.
Develop shuttle systems around business district parking garages to reduce congestion and create shorter commutes.	Reduces idling fuel emissions and direct and indirect VMT.

LEED = Leadership in Energy and Environmental Design; HVAC = heating, ventilation, and air-conditioning

Source: (Washington State Department of Ecology, 2008)

Table 3. SMAQMD Recommended Measures for Land Use Emission Reductions

Measure Number	Title	Description	Mitigation Points
Bicycle/Pedestrian/Transit Measures			
1	Bike parking	Non-residential projects provide plentiful short-term and long-term bicycle parking facilities to meet peak season maximum demand.	0.625
2	End of trip facilities	Non-residential projects provide "end-of-trip" facilities including showers, lockers, and changing space.	0.625
3	Bike parking at multi-unit residential	Long-term bicycle parking is provided at apartment complexes or condominiums without garages.	0.625
4	Proximity to bike path/bike lanes	Entire project is located within 1/2 mile of an existing Class I or Class II bike lane and project design includes a comparable network that connects the project uses to the existing offsite facility.	0.625
5	Pedestrian network	The project provides a pedestrian access network that internally links all uses and connects to all existing or planned external streets and pedestrian facilities contiguous with the project site.	1.0
6	Pedestrian barriers minimized	Site design and building placement minimize barriers to pedestrian access and interconnectivity. Physical barriers such as walls, berms, landscaping, and slopes between residential and non-residential uses that impede bicycle or pedestrian circulation are eliminated.	1.0
7	Bus shelter for existing transit service	Bus or Streetcar service provides headways of one hour or less for stops within 1/4 mile; project provides safe and convenient bicycle/pedestrian access to transit stop(s) and provides essential transit stop improvements (i.e., shelters, route information, benches, and lighting).	0.25-1.0
8	Bus shelter for planned transit service	Project provides transit stops with safe and convenient bicycle/pedestrian access. Project provides essential transit stop improvements (i.e., shelters, route information, benches, and lighting) in anticipation of future transit service.	0.25
9	Traffic calming	Project design includes pedestrian/bicycle safety and traffic calming measures in excess of jurisdiction requirements. Roadways are designed to reduce motor vehicle speeds and encourage pedestrian and bicycle trips by featuring traffic calming features.	0.25-1.0
Parking Measures			
10a	Paid parking	Employee and/or customer paid parking system	1.0-7.2
10b	Parking cash out	Employer provides employees with a choice of forgoing subsidized parking for a cash payment equivalent to the cost of the parking space to the employer.	0.6-4.5
11	Minimum parking	Provide minimum amount of parking required. Special review of parking required.	0.1-6.0
12	Parking reduction beyond code	Provide parking reduction less than code. Special review of parking required. Recommend a Shared Parking strategy.	0.1-12

Measure Number	Title	Description	Mitigation Points
13	Pedestrian pathway through parking	Provide a parking lot design that includes clearly marked and shaded pedestrian pathways between transit facilities and building entrances.	0.5
14	Off street parking	Parking facilities are not adjacent to street frontage.	0.1-1.5
Site Design Measures			
15	Office/Mixed-use density	Project provides high density office or mixed-use proximate to transit.	0.1-2.0
16	Orientation to existing transit, bikeway, or pedestrian corridor	Project is oriented towards existing transit, bicycle, or pedestrian corridor. Setback distance is minimized.	0.5
17	Orientation toward planned transit, bikeway, or pedestrian corridor	Project is oriented towards planned transit, bicycle, or pedestrian corridor. Setback distance is minimized.	0.25
18	Residential density	Project provides high-density residential development.	1.0-12
19	Street grid	Multiple and direct street routing (grid style).	1.0
20	Neighborhood electric vehicle access	Make physical development consistent with requirements for neighborhood electric vehicles.	0.5-1.5
21	Affordable housing component	Residential development projects of 5 or more dwelling units provide a deed-restricted low-income housing component onsite (as defined in Ch 22.35 of Sacramento County Ordinance Code) [Developers who pay into In-Lieu Fee Programs are not considered eligible to receive credit for this measure].	0.6-4.0
Mixed-use Measures			
22	Urban mixed-use	Development of projects predominantly characterized by properties on which various uses, such as office, commercial, institutional, and residential, are combined in a single building or on a single site in an integrated development project with functional interrelationships and a coherent physical design.	3.0-9.0
23	Suburban mixed-use	Have at least three of the following on site and/or offsite within ¼ mile: Residential Development, Retail Development, Park, Open Space, or Office.	3.0
24	Other mixed-use	All residential units are within ¼ mile of parks, schools or other civic uses.	1.0
Building Component Measures			
25	No fireplace	Project does not feature fireplaces or wood burning stoves.	1.0
26	Reserved for future measure		
27	Energy Star roof	Install Energy Star labeled roof materials.	0.5-1.0

Measure Number	Title	Description	Mitigation Points
28	Onsite renewable energy system	Project provides onsite renewable energy system(s).	1.0-3.0
30	Solar orientation	Orient 75 or more percent of homes and/or buildings to face either north or south (within 30 degrees of N/S).	0.5
31	Non-roof surfaces	Provide shade (within 5 years) and/or use light-colored/high-albedo materials (reflectance of at least 0.3) and/or open grid pavement for at least 30 percent of the site's non-roof impervious surfaces, including parking lots, walkways, plazas, etc.; OR place a minimum of 50 percent of parking spaces underground or covered by structured parking; OR use an open-grid pavement system (less than 50 percent impervious) for a minimum of 50 percent of the parking lot area. Unshaded parking lot areas, driveways, fire lanes, and other paved areas have a minimum albedo of .3 or greater.	1.0
32	Green roof	Install a vegetated roof that covers at least 50 percent of roof area.	0.5
TDM and Miscellaneous Measures			
33	Transportation Management Association membership	Include permanent TMA membership and funding requirement. Funding to be provided by Community Facilities District or Kitsap County Service Area or other non-revocable funding mechanism.	5.0
34	Electric lawnmower	Provide a complimentary electric lawnmower to each residential buyer.	1.0
99	Other	Other proposed strategies, in consultation with project lead agency and SMAQMD.	To Be Determined

Source: (Sacramento Metropolitan Air Quality Management District, 2015)