Sacramento Metropolitan Air Quality Management District

Recommended guidance for Land Use Emission Reductions 2007 Update

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SMAQMD Guidance for
Land Use Emission Reductions

The mitigation measures listed in this guidance document are divided into categories based on the projects anticipated end use of the project (residential, commercial, or mixed-use). The categories are denoted within the measures by letter: C=Commercial, R=Residential, and M=Mixed-use.

Mitigation points are used to quantify the approximate emission reduction factor associated with a particular mitigation measure in the list below. The points are equivalent to a percentage of emission reduction associated with using a particular measure in a project. For example, implementing mitigation measures in a project that add up to 15 mitigation points means that the measures are anticipated to make a 15% reduction in the projects anticipated operational emissions.

Summary Table

Measure #	*Title*	*Use*	*Description*	*Mitigation Points*
Bicycle/Pedestrian/Transit Measures				
1	**Bike parking**	C,M	**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**	C,M	**Non-residential projects provide "end-of-trip" facilities including showers, lockers, and changing space**	0.625
3	**Bike parking at multi-unit residential**	R	**Long-term bicycle parking is provided at apartment complexes or condominiums without garages**	0.625
4	**Proximity to bike path/bike lanes**	R,C,M	**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**	R,C,M	**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**	R,C,M	**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**	R,C,M	**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).**	0.5

8	**Bus shelter for planned transit service**	C	**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**	R,C,M	**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**	R,C,M	**Employee and/or customer paid parking system**	1.0-7.2
10b	**Parking cash out**	C, M	**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**	R,C,M	**Provide minimum amount of parking required. Special review of parking required.**	0.1-6.0
12	**Parking reduction beyond code**	R,C,M	**Provide parking reduction less than code. Special review of parking required. Recommend a Shared Parking strategy.**	0.1-12
13	**Pedestrian pathway through parking**	R,C,M	**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**	R,C,M	**Parking facilities are not adjacent to street frontage**	0.1-1.5
Site Design Measures				
15	**Office/Mixed-use density**	C, M	**Project provides high density office or mixed-use proximate to transit**	0.1-2.0
16	**Orientation to existing transit, bikeway, or pedestrian corridor**	R,C,M	**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**	R,C,M	**Project is oriented towards planned transit, bicycle, or pedestrian corridor. Setback distance is minimized**	0.25
18	**Residential density**	R	**Project provides high-density residential development**	1.0-12
19	**Street grid**	R, C, M	**Multiple and direct street routing (grid style)**	1.0
20	**Neighborhood electric vehicle access**	R,C,M	**Make physical development consistent with requirements for neighborhood electric vehicles**	0.5-1.5
21	**Affordable housing component**	R	**Residential development projects of 5 or more dwelling units provide a deed-restricted low-income housing component on-site (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**	M	**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**	R,C,M	**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**	R, M	**All residential units are within ¼ mile of parks, schools or other civic uses.**	1.0
Building Component Measures				
25	**No fireplace**	R	**Project does not feature fireplaces or wood burning stoves**	1.0
26	**Ozone destruction catalyst**	R, C, M	**Install ozone destruction catalyst on air conditioning systems**	1.25

27	**Energy Star roof**	C	**Install Energy Star labeled roof materials**	0.5-1.0
28	**Onsite renewable energy system**	R,C,M	**Project provides onsite renewable energy system(s)**	1.0-3.0
29	**Exceed title 24**	R	**Project Exceeds title 24 requirements by 20%**	1.0
30	**Solar orientation**	R	**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**	R,C,M	**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% of the site's non-roof impervious surfaces, including parking lots, walkways, plazas, etc.; OR place a minimum of 50% of parking spaces underground or covered by structured parking; OR use an open-grid pavement system (less than 50% impervious) for a minimum of 50% 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**	C	**Install a vegetated roof that covers at least 50% of roof area**	0.5
TDM and Misc. Measures				
33	**Transportation Management Association membership**	R,C,M	**Include permanent TMA membership and funding requirement. Funding to be provided by Community Facilities District or County Service Area or other non-revocable funding mechanism.**	5.0
34	**Electric lawnmower**	R	**Provide a complimentary electric lawnmower to each residential buyer**	1.0
99	**Other**	R,C,M	**Other proposed strategies, in consultation with project lead agency and SMAQMD**	To Be Determined

Scaling methodology for projects with multiple land use types:

In mixed use projects with multiple land use types measures that are limited in application to one type of land use will only be counted as mitigating the emissions associated with the trip generation for that land use type. This scaling shall be done using one the following methodologies:

Scaling method 1: Trip Generation

In projects where the total floor area for each specific land use type is known and an associated trip generation rate can be determined by utilizing the Institute of Transportation Engineers (ITE) trip generation publication[1] the measure shall be scaled using the following methodology. The total point value of the measure shall be scaled by a factor of X, where X is equal to the amount of trip generation associated with the specific land use type to which the measure applies as a percentage of the total trip generation associated with the entire project. For example, if a project has a commercial use component that as anticipated to generate 40% of the total trips associated with the entire project, a measure that only applies to the commercial portion of the project shall be scaled down to 40% of the total point value listed in this document.

Scaling method 2: Specific use by square footage

In projects where the total square footage for each general land use type (commercial, residential, transportation, ect) is known, the measure shall be using the following methodology. The measure shall be scaled by a factor of Y, where Y is the percentages of net square footage designated for that land use as a portion of the total square footage for the entire project. For example, if 40% of the total square footage in a project is designated for residential uses, a measure that only applies to the residential portion of the project shall be scaled down to 40% of the total point value listed in this document

Scaling method 3: Specific use by percentage of net lot area

In projects for where the total square footage designated for each land use is not known, measures that apply only to one type of land use shall be scaled based on the percentage of net lot area[2] designated for that use. For example, a hypothetical project has 50% of the net lot area designated for residential uses, 40% designated for commercial uses, and 10% devoted to other purposes. The project includes a residential only measure in the Air Quality Mitigation Plan. If the measures mitigation value is one point, the maximum mitigation value the project would receive for this measure is .5 points, because the measure only applies to 50% of the project.

[1] The ITE Trip Generation Manual is available online at: http://www.ite.org/tripgen/trippubs.asp. The ISBN number for this publication is **0-935403-79-5**.

[2] *Net lot area* is defined by SMAQMD as the total horizontal net area within the lot lines of the lot(s) or parcel(s) that make up the project site excluding land designated for undeveloped open space, but including publicly dedicated land, public streets, highways, roads, alleys, pedestrian pathways, bicycle pathways, and transit facilities.

Bicycle/Pedestrian/Transit Measures

1. Non-residential projects provide plentiful short-term and long-term bicycle parking facilities to meet peak season maximum demand.
C,M 0.625

The location and design of bicycle parking facilities minimizes impediments to pedestrian activity.

Short-term facilities are provided at a minimum ratio of one bike rack space per 20 vehicle spaces. Long-term facilities provide a minimum ratio of one long-term bicycle storage space per 20 **employee** parking spaces.

Short-term facilities are located adjacent to destination(s); within 50' of all primary entrances unless it can be demonstrated that a greater distance is necessary for safety. Racks have a non-enclosed design that allows for the use of high-security U-shaped locks to lock the frame and one wheel to the rack.

Long–term facilities consist of one of the following; a bicycle locker, a locked room with short-term bicycle parking facilities and access limited to bicyclists only, or a standard rack in a location that is staffed or monitored by video surveillance during standard operating hours.

Facilities are weather-protected and secure. Facilities are at the ground level and are free of access restrictions that could impede bicycle storage. Facilities comply with the California Department of Transportation "Pedestrian and Bicycle Facilities in California" technical reference document.

Proponent shall provide information demonstrating compliance with measure requirements including, but not limited to: a map/graphic depicting the location of bicycle parking facilities within the project site, a graphic depiction of the parking facilities to be used, and a description of how the quantity of facilities was calculated (show the calculations).

If the project documentation does not include a figure for the quantity of parking devoted to employees, the project shall provide one long-term bicycle storage space per 20 employees (include a description of the method used to estimate the number of individuals employed on site when the project is operational).

The successful implementation of this measure may be verified by a site review and/or consultation with lead agency staff to ensure that bicycle parking facilities installed in the project match the products described in the Air Quality Mitigation Plan.

2. Non-residential projects provide "end-of-trip" facilities including showers, lockers, and changing space.
C,M 0.625

Facilities shall be provided in the following ratio: four clothes lockers and one shower provided for every 80 employee parking spaces. For projects with 160 or more employee parking spaces, separate facilities are required for each gender. Proponent shall provide information demonstrating compliance with measure requirements including, but not limited to a description of how the quantity of facilities was calculated (show the calculations).

If the project documentation does not include a figure for the quantity of parking devoted to employees, facilities shall be provided in the following ratio: four clothes lockers and one shower

provided for every 80 employees (include a description of method used to estimate the number of individuals employed on site when the project is operational).

The successful implementation of this measure may be verified by a site review and/or consultation with lead agency staff to ensure that end-of-trip facilities installed in the project match the facilities described in the Air Quality Mitigation Plan.

3. Long-term bicycle parking is provided at apartment complexes or condominiums without garages.
R 0.625

Project provides one long-term bicycle parking space for each unit without a garage. Long–term facilities shall consist of one of the following: a bicycle locker, a locked room with standard racks and access limited to bicyclists only, or a standard rack in a location that is staffed and/or monitored by video surveillance 24 hours per day. Facilities comply with standards listed in SMAQMD Mitigation Measure #1 (one) and the "Pedestrian and Bicycle Facilities in California" technical reference document published by the California Department of Transportation[3].

Proponent shall provide information demonstrating compliance with measure requirements including, but not limited to; a map/graphic depicting the location of bicycle parking facilities within the project site:

1. If each unit is to include bike parking, provide a graphic depicting the size and layout of bicycle parking facility.
2. If multiple or group bicycle parking facilities are utilized, provide a narrative description of how the facilities will be permanently maintained and operated during project operation.

The successful implementation of this measure may be verified by a site review and/or consultation with lead agency staff to ensure that bicycle parking facilities installed in the project match the facilities described in the Air Quality Mitigation Plan.

4. Entire project is located within 1/2 mile of an existing Class I or Class II bike lane and project design includes an internal network that connects the project uses to the existing offsite facility.
R,C,M 0.625

Existing facilities are defined as those facilities that are physically constructed and ready for use prior to the first 20% of the projects occupancy permits being granted.

Project design includes a designated bicycle route connecting all units, on-site bicycle parking facilities, offsite bicycle facilities, site entrances, and primary building entrances to existing Class I or Class II bike lane(s) within ½ mile. Bicycle route connects to all streets contiguous with project site. Bicycle route has minimum conflicts with automobile parking and circulation facilities. All streets internal to the project wider than 75 feet have class II bicycle lanes on both sides. Facilities comply with the "Pedestrian and Bicycle Facilities in California" technical reference document published by the California Department of Transportation.

Proponent shall provide information demonstrating compliance with measure requirements including, but not limited to; a map/graphic depicting the bicycle route.

[3] The "Pedestrian and Bicycle Facilities in California" document is available online at: http://www.dot.ca.gov/hq/traffops/survey/pedestrian/TR_MAY0405.pdf.

The successful implementation of this measure may be verified by a site review and/or consultation with lead agency staff to ensure that the bicycle route installed in the project match the layout of the bicycle route described in the Air Quality Mitigation Plan.

5. 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.
R,C,M

1.0 for connecting to **existing** external streets and pedestrian facilities

0.5 for connecting to **planned** external streets and pedestrian facilities (facilities must be included pedestrian master plan or equivalent)

Existing facilities are defined as those facilities that are physically constructed and ready for use prior to the first 20% of the projects occupancy permits being granted.

Project design includes a designated pedestrian route interconnecting all internal uses, site entrances, primary building entrances, public facilities, and adjacent uses to existing external pedestrian facilities and streets. Route has minimal conflict with parking and automobile circulation facilities. Streets (with the exception of alleys) within the project have sidewalks on both sides. All sidewalks internal and adjacent to project site are minimum of five feet wide. All sidewalks feature vertical curbs. Pedestrian facilities and improvements such as grade separation, wider sidewalks, and traffic calming are implemented wherever feasible to minimize pedestrian barriers. All site entrances provide pedestrian access. Facilities comply with the California Department of Transportation “Pedestrian and Bicycle Facilities in California” technical reference document.

Proponent shall provide information demonstrating compliance with measure requirements including, but not limited to, a narrative description and a map to scale that graphically depicts the pedestrian route.

The successful implementation of this measure may be verified by a site review and/or consultation with lead agency staff to ensure that the pedestrian route installed in the project match the layout of the pedestrian route described in the Air Quality Mitigation Plan.

6. 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.
R,C,M 1.0

Barriers to pedestrian access of neighboring facilities and sites are minimized. This measure is not meant to prevent the limited use of barriers to ensure public safety by prohibiting access to hazardous areas, ect.

Proponent shall provide information demonstrating compliance with measure requirements including, but not limited to, a map/graphic depicting the pedestrian route. Denote the location and design of any pedestrian access barriers incorporated into the project design to ensure public safety.

The successful implementation of this measure may be verified by a site review and/or consultation with lead agency staff to ensure that the barrier-free site design described in the Air Quality Mitigation Plan matches the layout of the site as built.

7. 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).
R,C,M 0.25-1.0

Bus or streetcar service must be in place prior to the first 20% of the projects occupancy permits being granted.

Mitigation Value varies depending on the frequency of bus or streetcar service. For bus service with headways of one hour, 0.25 points are available. For bus service with headways of 30 minutes, 0.5 points are available. For service of 15 minutes or greater, one mitigation point is available.

Safe and convenient bicycle/pedestrian access must be provided to all transit stops within ¼ mile of project site border.

The successful implementation of this measure may be verified by a site review and/or consultation with lead agency staff and to ensure that the transit stop improvements and access routes installed in the project match the route and facilities described in the Air Quality Mitigation Plan. SMAQMD may further verify implementation by consulting with the transit service provider to ensure that the transit route(s) adjacent to the project site run at the minimum required frequency described in the Air Quality Mitigation Plan

8. 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.
R,C,M 0.25

This measure applies only to planned projects that do not have transit service within ¼ a mile. A project cannot get points for both this measure and measure seven.

Safe and convenient bicycle/pedestrian access must be provided to all transit stops within ¼ mile of project site border. The air district will determine if the access is “safe and convenient” by making the following design considerations: Is this the most direct route for the accessing the transit stop? Does the access route contain barriers or safety hazards that would discourage pedestrian use? Does the access route adequately connect to all portions of the project? Does the route feature amenities to encourage use, such as landscaping, proximity to open space, ect?

The successful implementation of this measure may be verified by a site review and/or consultation with lead agency staff and to ensure that the transit stop improvements and access routes installed in the project match the route and facilities described in the Air Quality Mitigation Plan.

9. 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 measures.
R,C,M see table

All sidewalks internal and adjacent to project site are minimum of five feet wide. All sidewalks feature vertical curbs. Roadways that converge internally within the project are routed in such a way as to avoid “skewed intersections;” which are intersections that meet at acute, rather than right, angles.

Intersections internal and adjacent to the project feature one or more of the following pedestrian safety/traffic calming design techniques: marked crosswalks, count-down signal timers, curb extensions, speed tables, raised crosswalks, raised intersections, median islands, tight corner radii, and roundabouts or mini-circles. Measures should comply with California Department of Transportation "Pedestrian and Bicycle Facilities in California" technical reference document.

Streets internal and adjacent to the project feature pedestrian safety/traffic calming measures such as on-street parking, planter strips with street trees, and chicanes/chokers (variations in road width to discourage high-speed travel).

Proponent shall provide information demonstrating compliance with measure requirements including, but not limited to; a map depicting which intersections/streets feature improvements, narrative descriptions and graphic representations of planned improvements, and narrative description of how the project utilized pedestrian/bicycle safety measures and traffic calming measures to encourage walking and the use of bicycles.

The successful implementation of this measure may be verified by a site review and/or consultation with lead agency staff to ensure that the pedestrian/bicycle safety and traffic calming measures are incorporated into the project as specified in the project's Air Quality Mitigation Plan.

Percent Reduction Table:

		Percent of streets with improvements			
		25%	*50%*	*75%*	*100%*
*Percent of **intersections** with improvements*	*25%*	**0.25**	**0.25**	**0.5**	**0.5**
	50%	**0.25**	**0.5**	**0.5**	**0.75**
	75%	**0.5**	**0.5**	**0.75**	**0.75**
	100%	**0.5**	**0.75**	**0.75**	**1.0**

Parking measures

10a. Employee and/or customer paid parking system (incorporate 99b Parking Cash Out).
C see table

Project must have a permanent and enforceable method of maintaining user fees for all parking facilities. This method must be approved by SMAQMD as part of the project's Air Quality Mitigation Plan. The facility may not provide customer or employee validations.

Daily charge for parking must be equal to or greater than the cost of a Sacramento Regional Transit day pass plus 20%. Monthly charge for parking must be equal to or greater than the cost of a Sacramento Regional Transit Monthly pass plus 20%.

Proponent shall provide information demonstrating compliance with measure requirements including, but not limited to, a narrative describing the method in which fees will be assessed and a description of how parking facility will be managed.

The successful implementation of this measure may be verified by a site review and/or consultation with lead agency staff to ensure that parking fees are being collected in the manner described in the Air Quality Mitigation Plan.

Percent Reduction Table:

	% Emission Reduction for all Pollutants			
	=<$7.00/day	*$8.00/day*	*$9.00/day*	*=>$10.00/day*
Urban site within ¼ mile of transit stop	**5.0**	**6.0**	**6.5**	**7.2**
Urban site greater than ¼ mile from transit stop	**1.5**	**2.4**	**3.3**	**4.2**
Suburban site within ¼ mile of transit stop	**2.0**	**2.8**	**3.8**	**4.7**
Suburban site greater than ¼ mile from transit stop	**1.0**	**1.9**	**2.8**	**3.7**

10b Parking Cash Out

In addition, a flexibility mechanism for measure 10a shall be that of a parking cash-out program. For example, if parking spaces are included as part of a commercial property lease to an employer and, as a result, are provided free to employees, an employer can still provide this alternative transit incentive to achieve a discounted emission reduction. Under this program, employees of the commercial business shall be given the option to elect a cash payment to opt out of the use of an employer-subsidized parking space. The cash payment shall be equal to the cost to the employer on a per space basis. Implementation of the parking cash-out mechanism shall be awarded 2/3 times the applicable value in the above table.

The proponent shall provide information demonstrating compliance with measure requirements including, but not limited to, a narrative describing the method in which the cash-out program will be implemented and enforced. The successful implementation of this provision and its enforcement are the same as discussed above.

11. Provide minimum amount of parking required. (Special review of parking required)
R,C,M see below

Project utilizes all parking reductions available under jurisdiction code to reduce required parking. Most zoning codes in the Sacramento area have provisions that allow a project to build less than

the typically mandated amount of parking if the development features design elements that reduce the need for automobile use. This measure recognizes the air quality benefit that results when facilities minimize parking needs, and grants mitigation value to projects that implement all available parking reductions.

Proponent shall provide information demonstrating compliance with measure requirements including, but not limited to, a recitation of the appropriate jurisdiction's code, a calculation that determines what the minimum amount is for this particular project and a commitment to provide no more than that amount of parking. In addition, if the uses of the project are not yet determined, there should be a declaratory statement in the plan declaring that the amount of parking will be recalculated again at the time those uses are finally determined in the planning stage and that no more than the minimum will be provided. Since parking mandates in Sacramento County vary based on location (Central Business District, incorporated area, or unincorporated area), and since Sacramento County Zoning Code is currently in the process of being updated, a specific percent trip reduction cannot be determined.

Once land uses are determined, the trip reduction factor associated with this measure can be determined by utilizing the Institute of Transportation Engineers (ITE) trip generation publication[4]. The reduction in trips can be computed as shown below by the ratio of the difference of minimum parking required by code and ITE peak parking demand to ITE peak parking demand for the land uses multiplied by 50%. The maximum achievable trip reduction is 6%.

Percent Trip Reduction = 0.5 * [(min parking required by code – ITE peak parking demand) / (ITE peak parking demand)]

The successful implementation of this measure may be verified by a site review and/or consultation with lead agency staff to ensure that parking facilities in the completed project did not deviate from the parking described in the Air Quality Mitigation Plan provided to SMAQMD

12. Provide parking reduction less than code. (Special review by jurisdiction may be required)
R,C,M see below

Proponent shall provide information demonstrating compliance with measure requirements including, but not limited to, a restatement of the minimum amount of parking determined in measure 11, a description of how many parking spaces are allocated to each land use. Proponent shall include calculations that show the parking reduction of spaces for each land use type, a commitment to provide the reduced amount of parking, and a statement confirming that if uses change in the planning stage, parking will be recalculated and reduced according to the measure.

Trip reductions associated with parking reductions beyond code shall be computed in the same manner as described under measure 11, as the same methodology applies. The maximum achievable trip reduction is 12%.

The successful implementation of this measure may be verified by a site review and/or consultation with lead agency staff to ensure that the parking facilities in the completed project did not deviate from the parking described in the Air Quality Mitigation Plan provided to SMAQMD.

This measure can be readily implemented through a Shared Parking strategy, wherein parking is utilized jointly among different land uses, buildings, and facilities in an area that experience peak parking needs at different times of day and day of the week. For example, residential uses and/or

[4] The ITE Trip Generation Manual is available online at: http://www.ite.org/tripgen/trippubs.asp. The ISBN number for this publication is **0-935403-79-5**.

restaurant/retail uses, which experience peak parking demand during the evening/night and on the weekends, arrange to share parking facilities with office and/or educational uses, which experience peak demand during business hours and during the week.

13. Provide a parking lot design that includes clearly marked and shaded pedestrian pathways between transit facilities and building entrances.
R,C,M 0.5

Pathway must connect to all transit facilities internal or adjacent to project site.

Proponent shall provide information including, but not limited to, a written description and site plan of how the pathways are clearly marked, shaded, and are placed between transit facilities and building entrances.

The successful implementation of this measure may be verified by a site review and/or consultation with lead agency staff to determine if the built pedestrian pathways through parking facilities match the pedestrian pathways described in the Air Quality Mitigation Plan provided to SMAQMD.

14. Parking facilities are not adjacent to street frontage.
R,C,M 1.5 if parking facilities are located entirety behind buildings in relation to street frontage, in an area proximate to high density/mixed-use, in conjunction with other pedestrian-oriented measures, and where surrounding uses are also hiding parking.

1.0 if structured parking facilities with frontage along streets provide retail and commercial uses along the street frontage on the ground floor.

0.1 if surrounding development is not pedestrian-oriented, not hiding its parking, or not proximate to high density/mixed-use.

For 1.5% reduction, parking facilities shall not be sited adjacent to public roads contiguous with project site. Functioning pedestrian entrances to major site uses are located along street frontage. Parking facilities do not restrict pedestrian, bicycle, or transit access from adjoining uses. Proponent shall provide information demonstrating compliance with measure requirements including, but not limited to, a description of where parking is located relative to the buildings on the site, site plans, maps, or other graphics, which demonstrate the placement of parking facilities behind on-site buildings relative to streets contiguous with the project site.

Since the nature of this measure is psychological, rather than direct (such as parking pricing), the efficacy of this measure is highly dependent on surrounding uses and measures. For this measure to be fully effective, and to warrant a 1.5% trip reduction, surrounding uses shall be high density or mixed-use, there shall be other adjoining pedestrian and bicycle connections, such as wide sidewalks and bike lanes, and surrounding uses shall also implement measure 15.

For single family housing units, the parking space/garage access does not front thoroughfares. Parking/Garage access is relegated to rear of buildings and accessed from alleys or secondary streets.

For 1.0% reduction, (parking structures only) proponent must show that parking facilities that face street frontage feature ground floor retail along street frontage. Proponent shall provide information demonstrating compliance with measure requirements including, but not limited to, a written description of the parking facility and the amount of retail space on the ground floor, site plans, maps, or other graphics demonstrating the placement of retail/commercial space along all street fronts contiguous with parking structure.

The successful implementation of this measure may be verified by a site review and/or consultation with lead agency staff to determine if the built facilities match graphic exhibits in the Air Quality Mitigation Plan provided to SMAQMD.

For 0.1% reduction, the project is not among high-density or mixed uses, is not connected to pedestrian or bicycle access ways, or is among uses that do not also hide parking. This point value is reflective of the importance that other pedestrian and density measures be in place in order for this measure to be effective. Implementation shall be in accordance with that discussed above.

Site Design Measures

15. Project provides high density office or mixed-use proximate to transit.
C,M See table

Mitigation value is based on project density and proximity to transit. Planned transit must be in MTP or RT Master Plan. Maximum credit is 2.0 (light rail and bus points cannot be combined).

To count as "existing transit" service must be fully operational prior to the first 20% of the projects occupancy permits being granted

Project must provide safe and convenient pedestrian and bicycle access to all transit stops within ¼ mile. Proponent shall provide information demonstrating compliance with measure requirements including, but not limited to, a written description of how the project complies with the measure, a map or graphic depicting the location of the project in relation to the transit stop. Graphic should demonstrate a ¼-mile radius arc from transit and planned pathways and linkages to the transit stop. The proponent shall also provide graphics depicting the size and layout of building as well as calculations demonstrating the FAR (floor to area ratio).

The successful implementation of this measure may be verified by a site review and/or consultation with lead agency staff to ensure that the measure is being implemented in the manner described in the Air Quality Mitigation Plan.

Percent Reduction Table:

Transit Type:	No Transit	Planned Light Rail Transit			Planned Bus Rapid Transit		
Headway frequency:		15 min.	30 min.	1 hour	15 min.	30 min.	1 hour
0.75–1.5 FAR	0.05	0.5	0.4	0.2	0.25	.2	.1
1.5–2.25 FAR	0.1	0.75	0.5	0.25	0.3	.25	.15
2.25 or greater FAR	0.2	1.0	0.75	0.3	0.5	.3	.25

Transit Type:	No Transit	Existing Light Rail Transit			Existing Bus Rapid Transit		
Headway frequency:		15 min.	30 min.	1 hour	15 min.	30 min.	1 hour
0.75–1.5 FAR	0.05	1.0	0.75	0.25	0.5	0.4	0.2
1.5–2.25 FAR	0.1	1.5	1.0	0.5	0.75	0.5	0.25
2.25 or greater FAR	0.2	2.0	1.5	0.75	1.0	0.75	0.5

16. Project is oriented towards existing transit, bicycle, or pedestrian corridor. Setback distance is minimized.
R,C,M 0.5

Cannot get points for both this measure and measure 19.

Setback distance between project and adjacent uses is reduced to the minimum allowed under jurisdiction code. Setback distance between different buildings on project site is reduced to the minimum allowed under jurisdiction code. Setbacks between project buildings and sidewalks is reduced to the minimum allowed under jurisdiction code. Buildings are oriented towards street

frontage. Primary entrances to buildings are located along public street frontage. Project provides bicycle access to existing bicycle corridor. Project provides pedestrian access to existing pedestrian corridor.

Proponent shall provide information demonstrating compliance with measure requirements including, but not limited to, a written description of how the project complies with the measure, a map or graphic depicting the project's site design in relation to existing transit, bicycle, or pedestrian corridor. Graphic shall depict planned connections to existing transit, bicycle, or pedestrian corridor. Graphic shall depict setback distances between all project buildings and all adjacent streets, transit corridors, bicycle corridors, and pedestrian corridors.

The successful implementation of this measure may be verified by a site review and/or consultation with lead agency staff to ensure that the measure is being implemented in the manner described in the Air Quality Mitigation Plan.

17. Project is oriented towards planned transit, bicycle, or pedestrian corridor. Setback distance is minimized.
R,C,M 0.25

Cannot get points for both this measure and measure 18.

Planned transit, bicycle or pedestrian corridor must be in MTP, RT Master Plan, General Plan, or Community Plan.

Setback distance between project and existing or planned adjacent uses is minimized or non-existent. Setback distance between different buildings on project site is minimized. Setbacks between project buildings and planned or existing sidewalks are minimized. Buildings are oriented towards existing or planned street frontage. Primary entrances to buildings are located along planned or existing public street frontage. Project provides bicycle access to any planned bicycle corridor(s). Project provides pedestrian access to any planned pedestrian corridor(s).

Proponent shall provide information demonstrating compliance with measure requirements including, but not limited to, a written description of how the project complies with the measure, a map or graphic depicting the projects site design in relation to planned transit, bicycle, or pedestrian corridor. Graphic shall depict planned connections to planned transit, bicycle, or pedestrian corridor. Graphic shall depict setback distances between all project buildings and all planned adjacent streets, transit corridors, bicycle corridors, and pedestrian corridors.

The successful implementation of this measure may be verified by a site review and/or consultation with lead agency staff to ensure that the measure is being implemented in the manner described in the Air Quality Mitigation Plan.

18. Project provides high-density residential development.
R see table

Mitigation value is based on project density and proximity to transit. Density is calculated by determining the number of units per acre ("du/acre") within the residential portion of the projects net lot area. Transit facilities must be within ¼ mile of project border. Project provides safe and convenient bicycle/pedestrian access to all transit stop(s) within ¼ mile of project border. Planned transit must be in MTP or RT Master Plan.

Maximum credit is 12 mitigation points (light rail and bus points cannot be combined). Reductions are calculated relative to a baseline 3 du/acre residential development. Net residential density excludes the area devoted to arterials, open space, and other land uses, but includes local streets.

Proponent shall provide information demonstrating compliance with measure requirements including, but not limited to, a written description of how the project complies with the measure, a map or graphic depicting the project's site design and density in various portions. Calculations shall be provided that clearly show how the density figures were arrived.

The successful implementation of this measure may be verified by a site review and/or consultation with lead agency staff to ensure that the project was built at the density described in the Air Quality Mitigation Plan and is within ¼ a mile of existing transit, if applicable.

Percent Reduction Table:

To use this table, determine the residential density of the proposed project, and corresponding Base Percent Emission Reduction. This is the range of emission reductions that density of project provides relative to a 3 du/residential acre baseline. Next, determine where the proposed project falls in the range corresponding to where the number of dwelling units fits within this given range. Finally, if the project is within ¼ mile of existing or planned transit of the listed type and headways, add the additional percent emission reduction to the base percent emission reduction, to determine the total percent reduction for this measure.

	Mitigation Points	Additional Mitigation points for Proximity to Transit					
Transit Type:	No Transit	Planned Light Rail Transit			Planned Bus Rapid Transit		
Headway frequency:		15 min.	30 min.	1 hour	15 min.	30 min.	1 hour
3–6 du/acre	0	0	0	0	0	0	0
7–10 du/acre	1	+1.0	+0.75	+0.5	+0.5	+0.25	+0.15
11–20 du/acre	3	+1.0	+0.75	+0.5	+0.5	+0.25	+0.15
21–30 du/acre	5	+1.0	+0.75	+0.5	+0.5	+0.25	+0.15
31–40 du/acre	6	+1.0	+0.75	+0.5	+0.5	+0.25	+0.15
41–50 du/acre	8	+1.0	+0.75	+0.5	+0.5	+0.25	+0.15
50+ du/acre	10	+1.0	+0.75	+0.5	+0.5	+0.25	+0.15

Transit Type:	No Transit	Existing Light Rail Transit			Existing Bus Rapid Transit		
Headway frequency:		15 min.	30 min.	1 hour	15 min.	30 min.	1 hour
3–6 du/acre	0	0	0	0	0	0	0
7–10 du/acre	1	+2.0	+1.5	+1.0	+1.5	+1.0	+0.5
11–20 du/acre	3	+2.0	+1.5	+1.0	+1.5	+1.0	+0.5
21–30 du/acre	5	+2.0	+1.5	+1.0	+1.5	+1.0	+0.5
31–40 du/acre	6	+2.0	+1.5	+1.0	+1.5	+1.0	+0.5
41–50 du/acre	8	+2.0	+1.5	+1.0	+1.5	+1.0	+0.5
50+ du/acre	10	+2.0	+1.5	+1.0	+1.5	+1.0	+0.5
Note: reductions in columns indicating type of transit within ¼ mile of the project site shall be added to those in the "No Transit" column. Cannot get percentage points for more than one transit type.							

19. Multiple and direct street routing (grid style).
R,C,M 1.0

This measure only applies to projects with an internal connectivity factor (CF) >= 0.80, and average of ¼ mile or less between external connections along perimeter of project. [CF= # of intersections / (# of cul-de-sacs + intersections)]

Cul-de-sacs with bicycle/pedestrian through access may be considered "complete intersections" when calculating the projects internal connectivity factor.

External connections are bike/pedestrian pathways and access points, or streets with safe and convenient bicycle and pedestrian access that connect the project to adjacent streets, sidewalks, and uses. If project site is adjacent to undeveloped land; streets, pathways, access points, and right-of-ways that provide for future access to adjacent uses may count for up to 50% of the external connections.

Block perimeter (the sum of the measurement of the length of all block sides) is limited to no more than 1,350 feet. Streets internal to the project should connect to streets external to the project whenever possible. Proponent shall provide information demonstrating compliance with measure requirements including, but not limited to, a written description of connectivity within and external to the project and a map or graphic depicting the project's transportation network design. The graphic shall depict the layout and specifications of all bike paths, pedestrian paths, streets, and sidewalks in relation to planned transit, bicycle, or pedestrian corridor. Graphic shall depict connections to adjacent uses. Calculations will clearly show how the "Connectivity Factor" was derived (show the work).

The successful implementation of this measure may be verified by a site review and/or consultation with lead agency staff to ensure that the measure is being implemented in the manner described in the Air Quality Mitigation Plan.

20. Make physical development consistent with requirements for neighborhood electric vehicles (NEV)[5].
R,C,M 0.5–1.5

Current studies show that for most trips, NEVs do not replace gas-fueled vehicles as the primary vehicle. For the purposes of providing incentives for developers to promote NEV use, assume the following:

For 1.5% reduction, a neighborhood shall have internal NEV connections and connections to other existing NEV networks serving all other types of uses.

For 1.0% reduction, a neighborhood shall have internal and external connections to surrounding neighborhoods.

For 0.5% reduction, a neighborhood has internal connections only.

Project design includes designated Neighborhood Electric Vehicles (NEV) routes and facilities. Roadways internal to project site are designed to accommodate NEVs.

[5] NEVs are a form of Low Speed Vehicle (LSV) and are governed by California Vehicle Code sections 21250 through 21266. The text of these codes may be viewed at: <http://www.dmv.ca.gov/pubs/vctop/vc/tocd11c1a5-2.htm>.

Proponent shall provide information demonstrating compliance with measure requirements including, but not limited to; a map/graphic depicting NEV routes and exclusive NEV roadways within project site, graphics of street layout's for roadways with separate NEV lanes depicting lane width and layout, a narrative description of any design modifications made to accommodate NEVs.

Commercial and Mixed-use projects must provide exclusive NEV parking facilities.

Emission benefits associated with this measure are difficult to quantify. Credit for this measure will be granted only in limited circumstances to specific types of developments, in conjunction with coordination with SMAQMD during the design phase of the project. The successful implementation of this measure may be verified by a site review and/or consultation with lead agency staff to ensure that project roadways match the NEV supportive design described in the Air Quality Mitigation Plan.

21. Affordable Housing Component.

R 0.6–4.0

Residential development projects of five (5) or more dwelling units provide a deed-restricted low-income housing component on-site (as defined in Ch 22.35 of Sacramento County Ordinance Code).

Proponents who pay into In-Lieu Fee programs are not eligible for this measure. In-Lieu Fees are offered as an alternative way to meet affordable housing obligations. Inclusionary housing programs are designed to construct affordable housing. Sometimes an in-lieu fee is accepted in place of actual housing construction, to promote flexibility for land developers. In-lieu fees for an inclusionary program are intended to result in affordable housing construction off-site, although the amount of in-lieu fee collected is often not sufficient to construct the intended number of housing units. Assuming the in-lieu program is successful, when a developer elects to meet affordable housing requirements through an in-lieu program off-site, this creates more housing units (and therefore more vehicle trips) compared to meeting affordable housing requirements on-site and compared to having no inclusionary program at all. The affordable housing trip reduction credit reflects the fact that, in general, income is one of the most important predictors of household trip generation characteristics. If a market-rate housing project is constructed and an in-lieu contribution is accepted to meet affordable housing requirements, the housing that is later constructed using those in-lieu funds would potentially be eligible for trip reduction credit. However, the credit would be issued to the developer of the affordable housing (traffic studies do not typically take into account the future income levels of households when preparing trip generation assumptions) and not the various market rate housing developers that may have contributed to the fund. The award of emission reduction credit shall be based only on the proportion of affordable housing developed on-site because in-lieu programs simply induce a net increase in development.

Percentage reduction shall be calculated according to the following formula:

% reduction = % units deed-restricted below market rate housing * 0.04

The proponent shall provide the number of dwelling units and associated reduction in the Air Quality Mitigation Plan. The successful implementation of this measure may be verified by a site review and/or consultation with lead agency staff to ensure that measure is being implemented in the manner described in the Air Quality Mitigation Plan.

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.
M 3.0, up to 9.0 depending on job to housing ratio

Mitigation point values subject to change following technical review.

In buildings that are ten floors high or less, no single use may constitute less than 10% of total floor space. For buildings with more than ten floors, 75% of ground level floor space must be designated for retail uses.

Maximum Mitigation granted only for vertical mixed-use in single buildings with a FAR of 1.5 or greater. For projects with detached buildings, the Air Quality Mitigation Plan must include measure six. For detached buildings within a single site, all buildings must be placed within ¼ mile of the geographic center of the project site.

Proponent shall provide information demonstrating compliance with measure requirements including, but not limited to, a narrative description of the functional interrelationships between project uses, a map or graphic(s) demonstrating coherent physical design and pedestrian access route.

Cannot get credit for both this measure and measures 25 or 26

Up to 6 additional mitigation points may be recognized for projects that provide employment and housing in a ratio that leads to trip reduction. This reduction is based on an employment/housing balance, and assumes an ideal balance of 1.5 jobs per household. The exact reduction shall be computed according to the formula below, and the total reduction received through utilization of this measure shall not exceed 9 mitigation points. Proponent must provide calculation to receive greater than 3 mitigation point credit.

Employment/housing balance formula:

(Mitigation points = (1-(ABS(1.5*h-e)/(1.5*h+e))-0.25)/0.25*0.03)

h = study area housing units
e = study area employment
ABS= absolute value

The successful implementation of this measure may be verified by a site review and/or consultation with lead agency staff to ensure that measure is being implemented in the manner described in the Air Quality Mitigation Plan.

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.
R,C,M 3.0

Proponent shall provide information demonstrating compliance with measure requirements including, but not limited to, a narrative description of the functional interrelationships between the three onsite and/or offsite project uses, a map or graphic(s) demonstrating coherent physical design between all uses.

Cannot get credit for both this measure and measures 24 or 26.

The successful implementation of this measure may be verified by a site review and/or consultation with lead agency staff to ensure that the measure is being implemented in the manner described in the Air Quality Mitigation Plan.

24. Other mixed-use: All residential units are within ¼ mile of parks, schools or other civic uses.

R,M 1.0

Civic uses are government facilities that provide services directly to the public (post office, city hall, courthouse, community center, etc).

Proponent shall provide information demonstrating compliance with measure requirements including, but not limited to, a narrative description of park(s), school(s), and civic uses within ¼-mile, a map or graphic(s) demonstrating the location of the three facility types in relation to the project site, and a map or graphic demonstrating the pedestrian routes between the facilities and the project site.

Cannot get points for both this measure and measures 24 or 25.

The successful implementation of this measure may be verified by a site review and/or consultation with lead agency staff to ensure that the measure is being implemented in the manner described in the Air Quality Mitigation Plan.

Building Component Measures

25. Project does not feature fireplaces or wood burning stoves.
R 1.0

All buildings, units, and facilities; indoors or out, are free of devices designed to facilitate the combustion of wood or wood products. The use of Natural Gas or Electric Fireplaces is not limited by this measure, and the inclusion of natural gas or electric fireplaces in a project design will not affect SMAQMD endorsement of this measure as a part of an Air Quality Mitigation Plan.

Proponent shall provide information demonstrating compliance with measure requirements including, but not limited to, a written commitment in design documents, environmental documents and the project's Air Quality Mitigation Plan to refrain from installing any devices that facilitate the combustion of wood or wood products.

The successful implementation of this measure may be verified by a site review and/or consultation with lead agency staff to confirm that the project as built does not contain fireplaces or other devices designed to facilitate the combustion of wood or wood products.

This measure may not be used if the project is subject to a legal mandate governing the inclusion of devices designed to facilitate the combustion of wood in new development.

26. Install ozone destruction catalyst on air conditioning systems.
R,C,M 1.25 if installed on all air conditioning units

Proponent shall provide information demonstrating compliance with measure requirements including, but not limited to, specifications and any available manufacturer's documentation on the devices to be used.

The successful implementation of this measure may be verified by a site review following construction to confirm that the project as built contains ozone destruction catalysts as described in the Air Quality Mitigation Plan.

27. Install Energy Star labeled roof materials.
C 0.5-1.0

Energy star qualified roof products reflect more of the sun's rays, decreasing the amount of heat transferred into a building.

Proponent shall provide information demonstrating compliance with measure requirements including, but not limited to, specifications of the roofing products and documentation confirming that products to be utilized are Energy Star Certified. 0.5 points are available for Energy Star labeled roof materials, while an additional 0.5 points is available (for a total of 1.0 point) for qualified roof products that meet ATSM high emissivity requirements.

The successful implementation of this measure may be verified by a site review and/or consultation with lead agency staff to ensure that roofing products installed in the project match the roofing products described in the Air Quality Mitigation Plan.

28. Project provides onsite renewable energy system(s).
R,C,M 1.0-3.0

The number of mitigation points granted for this measure is based on project performance. Performance is expressed as the electricity produced by the renewable system(s) as a percentage of the annual energy cost. Building energy cost is calculated using averages from the Department of Energy (DOE) Commercial Building Energy Consumption Survey database (CBECS) for Commercial and Mixed-use Projects, and averages from the DOE Residential Energy Consumption Survey database (RECS) for residential projects.

- Projects that install renewable energy systems capable of generating 2.5% of project's projected annual energy need shall receive 1.0 mitigation points.
- Projects that install renewable energy systems capable of generating 7.5% of project's projected annual energy need shall receive 2.0 mitigation points.
- Projects that install renewable energy systems capable of generating 12.5% of project's projected annual energy need shall receive 3.0 mitigation points.

Proponent shall provide information demonstrating compliance with measure requirements including, but not limited to; detailed specifications of the renewable energy devices to be utilized, analysis of the buildings' projected energy consumption using averages from CBECS or RECS as relevant to the building type, and analysis of the projected power output from the renewable energy system. Analysis should include detailed background information on the calculations made (show the work).

The successful implementation of this measure may be verified by a site review of the installation to confirm that components and devices match the renewable energy system described in the project's Air Quality Mitigation Plan.

29. Project Exceeds Title 24 requirements by 20%.
R 1.0

Proponent shall provide information demonstrating compliance with measure requirements including, but not limited to a copy of the Title 24 compliance sheet.

The Title 24 compliance documentation will serve as verification of implementation of this measure.

30. Orient 75 or more percent of homes and/or buildings to face either north or south (within 30 degrees of N/S).
R 0.5

Building design includes roof overhangs that are sufficient to block the high summer sun, but not the lower winter sun, from penetrating south facing windows. Trees, other landscaping features and other buildings are sited in such a way as to maximize shade in the summer and maximize solar access to walls and windows in the winter.

Proponent shall provide information and calculations demonstrating compliance with measure requirements including, but not limited to a map/graphic depicting the orientation of the buildings and the dimensions of the roof overhangs on project building(s).

The successful implementation of this measure may be verified by a site review following construction to confirm that the project as built contains the same building orientation.

31. Non-Roof Surfaces.
R,C,M 1.0

The mitigation measure reduces heat islands (thermal gradient differences between developed and undeveloped areas to minimize impact on microclimate and human and wildlife habitats. The measure offers project proponents the ability to provide any combination of the following strategies for 50% of the site hardscape (including roads, sidewalks, courtyards, and parking lots):

- Shade (within 15 years of occupancy)
- Paving materials with a Solar reflectance Index (SRI) of at least 29
- Open grid pavement system

This measure requires the use of patented or copywrite protected methodologies created by the American Society for Testing Materials (ASTM)[6].

The Solar Reflectance Index (SRI) is a measure of the constructed surface's ability to reflect solar heat, as shown by a small rise in temperature. It is defined so that a standard black (reflectance 0.05, emittance 0.90) is "0" and a standard white (reflectance 0.80, emittance 0.90) is 100. To calculate SRI for a given material, obtain the reflectance value and emittance value for the material. SRI is calculated according to ASTM E 1980-01. Reflectance is measured according to ASTM E 903, ASTM E 1918, or ASTM C 1549. Emittance is measured according to ASTM E 408 or ASTM C 1371. Default values for some materials will be available in the LEED-NC v2.2 Reference Guide[7].

Proponents may alternatively place a minimum of 50% of parking spaces under cover (defined as underground, under deck, under roof, or under a building). Any roof used to shade or cover must have a SRI of at least 29. Shade constructed surfaces with landscape features that use highly reflective materials. For additional benefits, combine this measure with a vegetated green roof mitigation measure option, or use of high-albedo materials to reduce heat absorption.

The successful implementation of this measure may be verified by a site review and/or consultation with lead agency staff to ensure that the measure is being implemented in the manner described in the Air Quality Mitigation Plan.

32. Install a vegetated roof that covers at least 50% of roof area.
C 0.5

Proponent shall provide information demonstrating compliance with measure requirements including, but not limited to, detailed graphics depicting the planned roof, detailed information on maintenance requirements for the roof, and the facilities plan for maintaining the roof post construction.

This measure may be combined with measure 29 for un-vegetated portion of roof.

The successful implementation of this measure may be verified by a site review to ensure that the vegetated roof installed in the project matches the roof described in the Air Quality Mitigation Plan. Project may also be reviewed to ensure that the roof is being maintained as outlined in the Air Quality Mitigation Plan.

[6] Information on American Society for Testing Materials (ASTM) methodologies are available at: < http://www.astm.org/cgi-bin/SoftCart.exe/index.shtml?E+mystore>.
[7] Information on the Leadership in Energy and Environmental Design (LEED) Green Building Rating System™ for new construction is available at: <http://www.usgbc.org/DisplayPage.aspx?CMSPageID=220>.

TDM and Miscellaneous Measures

33. Provide a complimentary electric lawnmower to each residential buyer.
R 1.0

This measure may only be used in residential communities with outdoor areas featuring grass lawns where unit occupant is responsible for maintenance/landscaping. Proponent may provide either cordless (battery powered) or standard electric lawn mowers.

The successful implementation of this measure may be verified by consultation with lead agency to ensure that the electric lawn mowers are distributed to building occupants upon initial occupation as outlined in the project's Air Quality Mitigation Plan.

34. Include permanent TMA membership and funding requirement. Funding to be provided by Community Facilities District or County Service Area or other non-revocable funding mechanism.
R,C,M 5.0

Proponent shall provide information demonstrating compliance with measure requirements including, but not limited to, a copy of the agreement/formal commitment of the project to ongoing membership through a non-revocable funding mechanism to the appropriate TMA, Community Facilities District, County Service Agency for the area in which the project is located.

The successful implementation of this measure may be verified by consultation with the funding oversight agency and project's lead agency to ensure that building occupants are maintaining commitments outlined in the Air Quality Mitigation Plan.

99. Other proposed strategies, in consultation with project lead agency and SMAQMD.
R,C,M TBD

Other proposed strategies must be permanent and enforceable methods of reducing emissions created by the project. Other proposed strategies cannot duplicate existing measures.

Proponent shall provide information demonstrating compliance with measure requirements including, but not limited to; evidence supporting emissions benefit such as device specifications or quantitative analysis of air quality benefit resulting from other proposed strategy.

The successful implementation of this measure may be verified by site inspection and/or consultation with lead agency to ensure that building occupants are maintaining commitments outlined in the project's Air Quality Mitigation Plan.